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Gleanings in Bee Culture



A New Beekeeper
A New Year—

1920

JANUARY
Vol. XLVIII No.1

WE ARE ALWAYS IN THE MARKET FOR

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How about supplies for next season's use?
Why not take advantage of the early or-
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Second-hand 60-lb. Cans

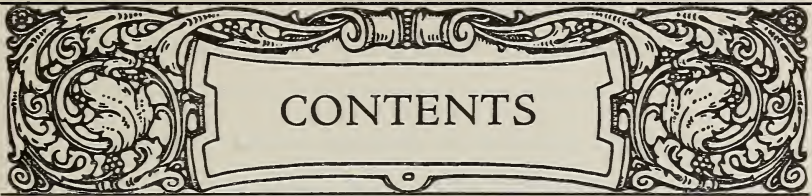
We have a carload or more in cases of
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"Griggs Saves You Freight"

GRIGGS BROTHERS CO.
Dept. No. 25 Toledo, Ohio



CONTENTS

JANUARY, 1920

| | |
|---|-------|
| Honey Markets | 4-5 |
| Editorials | 9-10 |
| Uncle Sam's Helping Hand..... E. R. Root | 11-15 |
| The Old Lesson Taught Again..... Editor | 16-17 |
| Do Drones Help Incubate?..... Mell Pritchard | 17-18 |
| How Long Can They Live?..... J. A. Green | 18 |
| A Drone's Grandmother..... C. E. Fowler | 18-19 |
| The Honey Cakes of Italy..... A. Tegnier | 19-20 |
| Bees in the Okanagan Valley..... George Weaver | 20-21 |
| Liquefying Honey..... J. E. Battram | 21 |
| Extracting in Hayti..... E. L. Sechrist | 21-22 |
| Bees Shipped in Pound Packages..... T. Dwight Whitman | 22-23 |
| Siftings..... J. E. Crane | 24 |
| Our Food Page..... Stanley Puerden | 25 |
| Beekeeping as a Sideline..... Grace Allen | 27-28 |
| From North, East, South, and West..... | 29-34 |
| Heads of Grain from Different Fields..... | 35-39 |
| Dreams..... Bill Mellvir | 39 |
| Bees, Men, and Things..... | 40 |
| Just News..... | 41 |
| Gleaned by Asking..... | 42-43 |
| Our Homes..... A. I. Root | 44-47 |

SUBSCRIPTION RATES.—One year, \$1.00; two years, \$1.75; three years, \$2.50; five years, \$4.00. Single copy 10 cents. Canadian subscription, 15 cents additional per year, and foreign subscription, 30 cents additional. **DISCONTINUANCE.**—Subscriptions, not paid in advance, or specifically ordered by the subscriber to be continued, will be stopped on expiration. No subscriber will be run into debt by us for this journal. **CHANGE OF ADDRESS.**—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. **REMITTANCE.**—Should be sent by postoffice money order, bank draft, express money order, or check. **CONTRIBUTIONS** to GLEANINGS columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. **ADVERTISING RATES.**—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. **ADVERTISERS' LIABILITY.**—The publishers use utmost diligence to establish in advance the reliability of every advertiser using space in this journal. Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly. Space occupied by reading matter in this issue, 65.8 per cent; advertising, 34.2 per cent.

THE A. I. ROOT COMPANY, Publishers, Medina, Ohio

Editorial Staff

E. R. ROOT
Editor

A. I. ROOT
Editor Home Dept.

IONA FOWLS
Assistant Editor

H. G. ROWE
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A HAPPY
PROSPEROUS
NEW YEAR
TO ALL

&

THE FRED W. MUTH CO.
CINCINNATI, OHIO
"THE HONEYMEN"

Attention Colorado Beekeepers

WE ARE NOW BOOKING ORDERS AT SPECIAL PRICES FOR

SUPERIOR FOUNDATION

to cover the 1920 requirements of dealers and beekeepers thruout the United States. Write us the name of the dealer from whom you purchas your general line of bee supplies, stating your approximate foundation requirements. We will quote you special prices for delivery thru your bee-supply dealer. If he cannot furnish you **Superior Foundation** we will supply you direct at wholesale prices.

WANTED: 50 tons of beeswax at highest prices. We have recently doubled our factory in size, to take care of the heavy demand for

SUPERIOR FOUNDATION.

Superior Honey Company :- Ogden, Utah
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BEE SUPPLIES

BEE SUPPLIES

SERVICE & QUALITY

Order your supplies early, so as to have everything ready for the honey flow, and save money by taking advantage of the early order cash discount. Send for our catalog--better still, send us a list of your supplies and we will be pleased to quote you.

C. H. W. WEBER & COMPANY

2146 CENTRAL AVE.

CINCINNATI, OHIO

HONEY MARKETS

The conditions surrounding the honey market have changed very little during the last month. Prices have remained practically stationary. The retail demand generally is good, and those best informed on honey market conditions the country over say they are expecting some advance in price, for honey is in a strong position considering the present severe sugar shortage.

Below we print prices as quoted by the Bureau of Markets, and by actual producers of honey.

U. S. Government Market Reports.

HONEY ARRIVALS, DEC. 1-15.

Medina, O.—120 pounds from Ohio; 39,400 pounds from Idaho, 410 pounds from New York, 100,670 pounds from Wyoming, and 44,596 from Minnesota arrived.

SHIPPING POINT INFORMATION, DEC. 15.

San Francisco, Calif.—Cold, clear. Supplies light. Too few sales to establish market.

Los Angeles, Calif.—Demand improving, movement good, market active. Carloads f. o. b. usual terms. Extracted, white sage, supplies light, extra light and light amber sage 18½c, light amber alfalfa 16c. Beeswax, in l. c. l. lots, 42-43c.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

(The prices quoted in this report, unless otherwise stated, represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding five days. Prices represent quotations for December 15 unless otherwise stated.)

Boston.—Supplies light, demand moderate, market steady. Sales by jobbers to grocers in small lots: Comb, New York, 24-section cases \$8.00-8.50, Vermont cases 20 sections \$6.75-7.50. Extracted and beeswax: no sales reported.

Chicago.—No carlot arrivals, no cars on track. Express receipts moderate from Northwest. Demand and movement moderate, market steady. Sales to jobbers: Idahos, Utahs, and Colorados, extracted, white alfalfa 19-20c; amber 17-18c per pound. Beeswax, demand and movement moderate, market steady. Sales to jobbers, unrefined 40-43c per pound.

Cincinnati.—2 Colorado arrived. Supplies light, demand and movement slow, market dull, few sales. Sales to jobbers: Comb, Western, 24-section cases \$7.00. Extracted, no sales reported. Beeswax, supplies light, demand good, market stronger, average yellow 45-48c per pound.

Cleveland.—Demand and movement good, market active, prices slightly higher. Sales to jobbers: Western, 60-pound tins white clover 25-27c per pound.

Kansas City.—Approximately 56 cases arrived. Demand and movement moderate, market steady. Sales to jobbers: Colorado and Missouri, light amber, extracted, 23c per pound. Comb, \$7.50-8.00 per case. California, light amber 22c per pound.

Minneapolis.—Supplies liberal, demand and movement limited, market steady. Sales direct to retailers: Western, comb, fancy light, 24-section case \$7.50. Extracted, in 60-pound cans 20c, some high as 22c per pound.

New York.—2 Utah, 4 California, 1 New York, 11,500 pounds Louisiana, 2,250 pounds Massachusetts, and 25 barrels Florida arrived. Supplies moderate, demand light, movement slow, market steady. Sales to jobbers: Extracted, per pound, California, white orange 23-25c, light amber sage 20-23c. New York buckwheat 15-16c. Per gallon, Porto Rican, mostly \$1.50. Comb, no sales reported. Beeswax, 225 pounds New Jersey, 1,000 pounds California, 650 pounds New York arrived. Supplies light, demand and movement moderate, market steady. Sales to jobbers, per pound, light 44-45c, dark 43-44c.

Philadelphia.—Since last report approximately 1,100 pounds New York, 660 gallons Florida, 1,400 gallons Cuba arrived. Demand and movement good, market firm. Sales to jobbers: Extracted, Florida, per pound, fancy light 21c, light amber 20½c. Cuban, light amber \$1.67 per gallon.

St. Louis.—Supplies light, demand and movement slow, market steady. Sales to jobbers: Extracted, Southern amber, per pound, in cans 15-16c, in barrels 14-15c. Comb, practically no supplies on market. No sales reported. Beeswax, prime 40c per pound.

St. Paul.—Supplies liberal, demand and movement limited, market steady. Sales direct to retailers: Western, comb, 24-section cases, fancy light \$7.50. Extracted, very few sales, in 60-lb. cans 24-25c per pound.

Denver.—Approximately 15,000 pounds extracted arrived. Supplies moderate, demand and movement moderate, market steady. Sales to jobbers: Comb, 24-section cases No. 1, \$6.75, No. 2 \$6.30. Extracted, white 19½-20c, light amber 18½-19c per pound. Beeswax 38c cash, 40 trade.

EXPORT DISTRIBUTION OF HONEY, NOV. 1-30.

Total, 244,674 pounds; to Netherlands, 99,500; to Spain, 16,969; to Sweden, 3,290; to England, 31,540; to Canada, 66,919; to Panama, 1,000; to China, 1,792; to British India, 11,013; to Straits Settlements, 1,008; Dutch East Indies, 2,666; Japan, 1,251; Philippine Islands, 6,232; to all other countries, 1,852 pounds.

George Livingston,

Acting Chief of Bureau.

Quotations From Producers.

The following are the opinions and quotations of actual honey-producers thruout the country received during the last few days:

ARIZONA.—Wholesale price producers are receiving: Extracted 15-16c; comb 25-30c. Retail price producers are receiving: Extracted 17-20c; comb 30-35c. There is a good demand for honey. The local demand is fair. Demand from big buyers is good but not much offered by producers. Most are holding. About 15 per cent of the crop is already sold.—W. I. Lively.

BRITISH COLUMBIA.—Wholesale price producers are receiving: Extracted 30c; comb 32c. Retail price producers are receiving: Extracted, 1-lb. jars, 50c; comb, 4-lb. cans, \$1.75. There is a good demand for honey no doubt helped by sugar shortage. Demand is both local and from big buyers. About 75 per cent of the crop is already sold.—W. J. Sheppard.

CALIFORNIA.—Not any honey in hands of producers that I know of. Stores have only the comb shipped in and sell at 35c per section. The demand for honey is not as usual for this time of year, but I could sell if I had on hand for my retail trade. All the local crop has been shipped out and sold.—M. H. Mendleson.

SOUTHERN CALIFORNIA.—Wholesale price producers are receiving: Extracted 19-20c for white; comb, very little to be had. Retail price producers are receiving is 25c for extracted. There is not a good demand for honey. About 90 per cent of the crop is in the Exchange. Most outsiders have not found ready sale.—L. L. Andrews.

COLORADO.—Wholesale price producers are receiving: Extracted 18c; comb \$6.00 per case down. Retail price producers are receiving for extracted honey 20c. Most sales of comb honey now are by small producers, who sell for anything they can get, from \$6.00 per case down. There is a good demand for honey, both local and shipping. About 75 per cent of the crop is already sold; or perhaps a little more.—J. A. Green.

FLORIDA.—No extracted to sell at wholesale; no comb produced. Retail price producers are receiving for extracted honey is \$2.00 per gallon, \$1.00 for 5-pound pail. An unusually good local demand. I suppose I am the only beekeeper in this county (DeSoto) that has any honey for sale.—Ward Lamkin.

FLORIDA.—Wholesale price producers are receiving: Extracted 16-18c; comb 30-35c per 10-12-oz. section. Retail price producers are receiving: Extracted 25-35c; comb 35-50c per 10 to 12-oz. section. There is a good demand for honey. About all of the crop is already sold.—C. H. Clute.

FLORIDA.—No honey for market at wholesale. Producers are receiving for extracted honey 20c at retail; no comb honey. The local demand is very small, and there are no big buyers. About 90 per

cent of the crop is already sold. Bees are in unusually good condition for winter, and very little, if any, feed will be needed.—R. L. Tucker.

IDAHO.—Wholesale price producers are receiving: Extracted, small lots 20c, carloads held at 20c; comb, fancy, carlots, \$6.50, No. 1 \$6.25, No. 2 \$6.00. Few retail sales. Demand for honey from big buyers light, improving. About 60 per cent of the crop of comb is already sold, and 10 per cent of extracted.—E. F. Atwater.

ILLINOIS.—Wholesale price producers are receiving: Extracted 25c; comb, No. 1 30c, No. 2 25c. Retail prices producers are receiving: Extracted 30c; comb 35c. There is a good local demand for honey. About 50 per cent of the crop is already sold.—A. L. Kildow.

INDIANA.—Retail price producers are receiving: Extracted 35c; comb 40c. There is a good local demand for honey. About 90 per cent of the crop is already sold. Necessary to buy outside in order to fill local orders.—E. S. Miller.

KANSAS.—Wholesale price producers are receiving for extracted, 18-20c; no comb honey. Retail price producers are receiving for extracted honey is 40-50c. There is a good local demand for honey. About 75 per cent of the crop is already sold.—A. D. Raffington.

MARYLAND.—Wholesale price producers are receiving: Extracted 22c; comb 25-28c. Retail price producers are receiving: Extracted 25c in cans, 35c in 1-lb. bottles; comb 30-40c. There is a fair local demand for honey. Almost all honey has left the producer. Wholesale and commission houses have some left; retailers also have a little.—S. G. Crocker, Jr.

MASSACHUSETTS.—No honey for sale at wholesale either comb or extracted by producers in this section. Retail price producers are receiving for extracted honey is 35c; no comb honey for sale. This is not a comb-honey producing State. Demand for honey is not as good as we have reason to expect, and is all local; no big buyers. About 80 per cent of the crop is already sold.—Omer M. Smith.

MICHIGAN.—Wholesale price producers are receiving for extracted, 20-21c; no comb on market. Retail price producers are receiving: Extracted 35-40c; comb, 45c a section. There is a good demand for honey, principally local. About 75-80 per cent of the crop is already sold.—R. H. Kelty.

MISSOURI.—Wholesale price producers are receiving: Extracted 25-30c; comb \$7.50 to \$7.80 per case. Retail price producers are receiving: Extracted 30-35c; comb 50-60c. There is a good local demand for honey and also from big buyers. About all the crop is already sold.—J. W. Romberger.

NEBRASKA.—Wholesale price producers are receiving: Extracted 24-26c; comb 30-32c. Retail price producers are receiving: Extracted 35-40c; comb 45-50c. There is a fair demand for honey. Practically all the crop is already sold.—F. J. Harris.

NEW JERSEY.—Wholesale price producers are receiving: Extracted 21c; comb \$3.50 per dozen. Retail price producers are receiving: Extracted, \$1.25 per quart; comb, 40c. There is a good local demand for honey. Practically all of the crop is already sold.—Elmer G. Carr.

OHIO.—Wholesale price producers are receiving for extracted honey is 25c; no comb on the market. Retail price producers are receiving for extracted honey is 30c. There is a good local demand for honey. Nearly all the honey is sold at the present writing except some small lots, which are demanding a good price. The market is very active, and beekeepers are looking for prices to remain at a high level as long as sugar is short and the prices soaring.—Fred Leininger & Son.

ONTARIO.—Wholesale price producers are receiving: Extracted, around 17c for dark and 25c for light; comb, from \$2.50 to \$4.00 a dozen, depending on grade. Retail price producers are receiving: Extracted, from 20-40c depending on the package and quality of honey; comb, from 30-40c a section. There is a good demand; most beekeepers are sold out. The demand now is mostly local; large producers have been generally sold out for some time. About 90 per cent of the crop is already sold.—F. Eric Millen.

WASHINGTON.—Wholesale price producers are receiving: Extracted 17-20c; comb \$6.00 per case. Retail price producers are receiving for extracted

honey is 20-25c. The demand for honey is not good. Roughly estimating, there is about one-third already sold.—Geo. W. B. Saxton.

WISCONSIN.—Wholesale price producers are receiving: Extracted 20-25c; comb, none on the market. Retail price producers are receiving: Extracted 30-40c; comb, 35-45c; only a very limited amount on hand. There is a good local demand and also from big buyers. About 90 per cent of the crop is already sold.—H. F. Wilson.

For Bee and Queen Rearers to Read

Altho the Wildflower Apiaries are no longer in the business of furnishing queens and bees, and have nothing to sell, we want bee and queen rearers to read the following letter written to Gleanings at the close of the last season:

Little Rock, Ark., Sept. 17, 1919.

Gleanings in Bee Culture, Medina, Ohio.

Gentlemen:—Beg to report that we have cleaned up all bee business on hand today. We have been very careful not to let anybody's order or his remittance get lost or misplaced, and insofar as we know have now shipped every fellow his queen bee or else returned to him his SAME postoffice money order, express money, draft, or check. Rest assured, our friends, that a little advertisement in your columns brings marvelous results and marvelous correspondence and experience as well. We must add to the expression "marvelous correspondence and experience," a heartfelt AMEN. We have tried to live up to our agreements, but have not always succeeded the VERY best. Last year we received no kicks at all, but have had several this year—and today a very unjust kick. But we have tried our best to always presume the customer right, and have tried to conduct ourselves accordingly.

Should any complaints ever reach you, we would appreciate it if you will kindly DIRECT the thing to be done to make it right, and we will endeavor to comply with your wishes if possible.

Very truly yours,

Wildflower Apiaries.

P. S.—The very best way to choke a chronic kicking customer to death is just to send back to him his SAME postoffice money-order, draft or check.

Advertisements Received too Late to Classify.

We have a very choice lot of white clover honey for sale at 25c per lb. in 60-lb. cans; also some very choice fall honey at same price.

M. V. Facey, Preston, Minn.

FOR SALE.—Fine 10-acre farm, half cultivated. Chickens, cows, incubators, household goods—everything, \$2,500.

A. Wieboldt, Olga, Fla.

FOR SALE OR TRADE.—One minute postal camera, and one Boswell stereopticon outfit.

Van's Honey Farm, Hebron, Ind.

FOR SALE.—Good second-hand 60-lb. cans, two to the case, used only once, 60c per case, cash with order.

E. B. Rosa, Monroe, Wisc.

FOR SALE.—Pure Italian queens. Dependable breeding stock my specialty. Bees in one and two pound packages. Circular free.

J. E. Wing, 155 Schiele Ave., San Jose, Calif.

WANTED.—Two-frame Cowan extractor in fair condition, for Langstroth frame. Write

J. M. Jacobson, Story City, R. D. No. 1, Iowa.

BEE SUPPLIES IN DIXIE

Dependable goods with prompt service. Save time and transportation costs.

L. W. Crovatt, Box 134, Savannah, Ga.

MONEYCOMB

The ALUMINUM HONEYCOMB

Moneycomb is a Moneycomb because it's a Money-making Honeycomb. Moneycomb users are Money- and Honey-making Beekeepers. That's why Moneycomb Boosters are found in every corner of the civilized world. You'll join the ever increasing Moneycomb Boosters' Club too the minute you give your bees a chance to be honey-producers instead of wax-builders

10 or 10,000 Moneycombs

will

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|------------------------------|--|
| 1 Produce more Honey | 6 Control disease |
| 2 Extract cleaner and faster | 7 Not be destroyed by moths or rodents |
| 3 Not sag | 8 More than pay for themselves during one honey flow |
| 4 Not melt down | |
| 5 Raise more brood | |

Every Gleanings' reader is acquainted with Harry Warren of Nevada—

WESTERN UNION TELEGRAM.

Fernly, Nevada, Nov. 12, 1919.

I am Field Manager of 100 apiaries of Union Honey Co. and have carefully watched and observed the advantages of your aluminum honeycomb and have satisfied myself beyond any doubt it is all and more than you claim for it. We are in the market for 12,000 of your combs. Will be at Davis, California, November 17th and would like to meet your Manager for purpose of arranging this deal.

HARRY R. WARREN.

Why hesitate to order today, specifying future shipping date? Our factory is now fully equipped and your order will be shipped immediately on receipt. Made in Langstroth or Hoffman sizes at 60c per frame f. o. b., Pasadena. Write for prices on both shallow and Jumbo sizes. Discounts on large orders.

Booklet "B 1," describing "Moneycombs," mailed on request

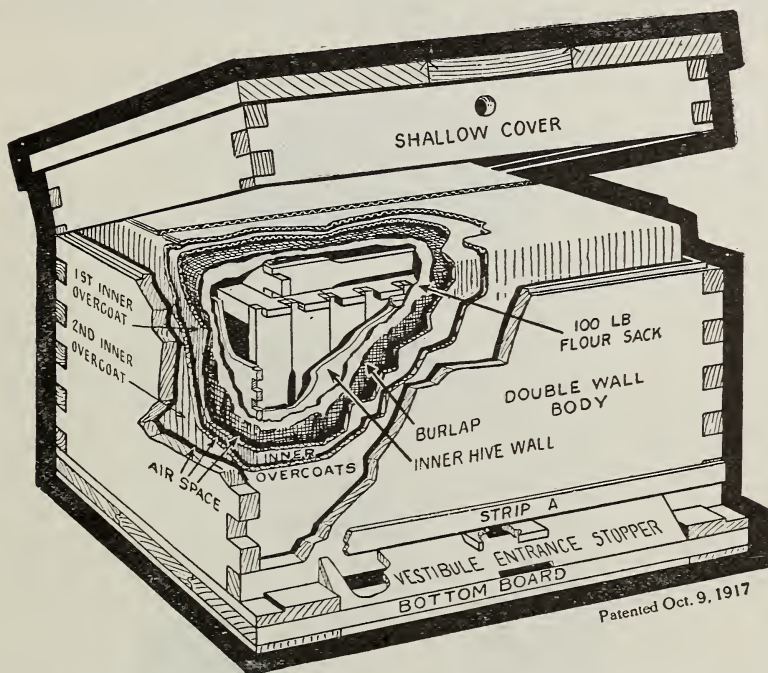
THE ALUMINUM HONEYCOMB CO.

FACTORY AND OFFICE

CHESTER AND COLORADO STS.

PASADENA, CALIF.

Winter Problem Solved by the Hive with an Inner Overcoat



NOW FURNISHED WITH JUMBO DEPTH OR STANDARD HOFFMAN FRAMES

In January of this year, Mr. Pellett, the associate editor of the American Bee Journal, wrote us suggesting that we place on the market, Protection Hives with Jumbo Depth Frames. He stated that if we could furnish them with $1\frac{1}{2}$ inch spacing, that in his opinion we would have very nearly an ideal hive and if he was again to engage in commercial honey production, this would be the hive that he would want. Numerous like requests from other beekeepers for this same equipment have been received.

We are now prepared to furnish Protection hives with Standard Hoffman Frames the same as in the past, or Standard Jumbo Depth Frames ten to the hive body, or those with $1\frac{1}{2}$ -inch spacing nine frames to the hive body. The same size covers, bottoms, and rims as used in the past will be supplied, the only difference will be in the depth of the hive body when the Jumbo frame is wanted.

Standard single wall hive, comb or extracted honey supers or bodies in the 10-frame size, are regular equipment for Protection Hives. Send for a new special circular of the Protection Hive which has been just issued.

TIN HONEY PACKAGES.

| | |
|----------------|---------------------------------------|
| 2 | lb. Friction top cans, cases of 24 |
| 2 | lb. Friction top cans, crates of 612 |
| $2\frac{1}{2}$ | lb. Friction top cans, cases of 24 |
| $2\frac{1}{2}$ | lb. Friction top cans, crates of 450 |
| 5 | lb. Friction top pails, cases of 12 |
| 5 | lb. Friction top pails, crates of 100 |
| 5 | lb. Friction top pails, crates of 203 |
| 10 | lb. Friction top pails, cases of 6 |
| 10 | lb. Friction top pails, crates of 113 |

Special Prices.

| | |
|--|---------|
| Crates of 100 five-pound pails..... | \$ 8.00 |
| Crates of 200 five-pound pails..... | 15.00 |
| Crates of 100 ten-pound pails..... | 12.50 |
| Sixty-pounds cans, two in a case, per case | 1.15 |
| Shipments made from Michigan, Ohio, Illinois and Maryland factories. | |

A. G. Woodman Co., Grand Rapids, Mich., U. S. A.

THE LARGE HIVE

Was Championed and Used Extensively by Charles Dadant as Early as 1868, and He Had Recognized Its Advantages Even Earlier Than That

Not satisfied with either the ten-frame of Langstroth nor the 8-frame hive of the size advocated by Quinby, he experimented with different sizes and styles before adopting a hive of ten frames, Quinby size.

Some of the hives used in his experiments in large numbers were:

8 to 14 frame Langstroth.

8 to 16 frame Quinby.

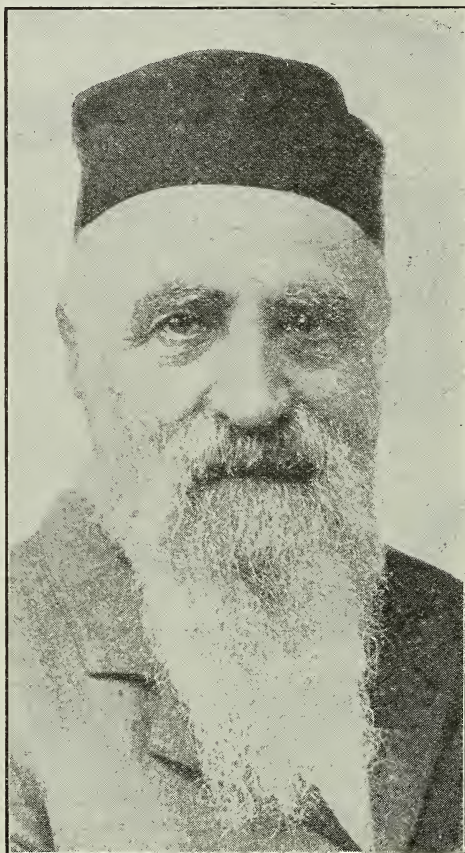
10 to 20 frame Debeauvois with frames 12 x 12.

Coffin-shaped hive with a circular frame.

Hives with frames 18 x 18 inches.

His ideal hive embodied the following points:

1. A deep frame to con-



CHARLES DADANT

form to the egg-laying circle of the queen.

2. A large, compact brood chamber in one story capable of accommodating the most prolific queen.

3. A multiple ventilation by means of 1½ inch spacing of frames.

4. Excellent for wintering on account of the 1½ inch spacing and large amount of honey over the cluster in the deep frame.

5. Swarm control through the wide spacing and large brood chamber.

6. Shallow 6¼ inch super frames for storage.

Our more than fifty years experience with bees in large hives convinces us that this is the hive for extracted honey.

The Original Dadant Hive he advocated and used did not adapt itself to the great amount of Langstroth equipment already in use. Moreover, it was very expensive. To remedy these two drawbacks we have evolved and now offer

THE MODIFIED DADANT HIVE

1. Eleven Frames, Langstroth Length, Quinby Depth.
2. 1½ inch spacing of frames for swarm control.
3. 6¼ Extracting frames.

4. Dovetailed body, regular reversible Cypress bottom and metal roof cover with inner cover.
5. Langstroth equipment easily used in connection.

If you want strong colonies, large honey crops, little swarming and good wintering, we believe this is the hive for you. Write today for descriptive booklet and prices.

DADANT & SON, HAMILTON, ILLINOIS

GLEANINGS IN BEE CULTURE

JANUARY, 1920

EDITORIAL

IN AN EARLY ISSUE we expect to give "a trick of the trade" in wiring foundation



A New Old Way of Wiring Comb Foundation.

that one man estimated would be worth \$1,000 to him. It will enable the beekeeper to increase the size of his regular hive so far as breeding capacity is concerned, without enlarging the hive, and at the same time will enable him to get a better control of swarming. The beauty of the "trick" is that it has been tested for several years by hundreds of beekeepers, and it works.



JUST AS GLEANINGS is going to press, we receive a characteristic letter from Dr.



Dr. Miller Writes Adieu.

C. C. Miller. While the message will bring deep regret to that great host of friends and readers who have so long enjoyed the Doctor's wisdomful writings, because now these can be expected no longer, yet the letter itself brings assurance of the longer sparing of his life. That is much to be thankful for.

The Doctor writes to us as follows:

Marango, Ill., Dec. 16, 1919.

Dear Folks:—I had some confidence that I could get out a bunch of Straws for January Gleanings, and, as usual, depended on the reading of the December number for inspiration for the most of them. But when I had finished reading the December number I had just *one straw*!

So it seems it's no go, and Straws may be considered a thing of the past; for, even if I could do the work, it would be thru too much effort, and extra effort, either physical or mental, is taboo under penalty of being thrown back where I was two months ago or worse.

Anyway, I've had a good time in the past, and since I've been sick the kind words from Medina and elsewhere have been very precious to me, my only regret being that I cannot personally answer each one. If the next world is any better than this—and I'm sure it is—it must be a very fine world.

With very best wishes to every one, I am

Cordially yours,

C. C. Miller.



IT IS GENERALLY considered that there is an indirect relation, or, perhaps, more exactly, a ratio, between the price of



Price of Sugar and Honey.

sugar and the price of honey. If this is true it means that one is somewhat the

competitor of the other—that is to say, both are supplying the demand of the public for something sweet. As the price of sugar goes up, especially if it is hard to get, other things being equal, the price of honey may become firmer even if it does not advance. This does not always follow, however. There are other factors that enter into the general proposition—so much so that it is very difficult to forecast what the price of honey will be, based on developments in regard to sugar.

During the last few weeks sugar has been becoming more and more scarce, and the price has been advancing. Sometimes there has been the belief that sugar would go down, especially after the holidays, when, it is said, there would be large supplies. One of the uncertainties has been whether the Sugar Equalization Board would be continued. If it should lapse by virtue of limitation January 1, it has been predicted that the price of sugar will mount rapidly to 15, 20, or even 25 cents a pound.

At this writing, (December 15), the McNary bill, which extends the life of the Sugar Equalization Board thru 1920, has passed the Senate. It is the belief that the House will pass it likewise, with the result, if the President approves, that the Board will be continued. In the meantime we are told that the chairman of the Board says he will resign, if the Board is continued, as it is too late now to put in restrictions on the price and distribution of sugar. Just what is going to happen seems to be all in a muddle.

From the United States honey market reports, published in the Honey Column, it appears that the market on honey is slow, and this in spite of the fact that sugar has been trying to climb upward, and doubtless will climb, if it gets a chance. Why has not honey taken a similar course?

Senator Pomerene of the United States Senate claims that the administration took the advice of a political economist, who advised against the purchase of the entire Cuban crop when it could have been bought at 6½ cents, instead of taking the advice of a practical business man who would have urged the purchase of this sugar. It is on account of this, he says, that millions of pounds of Cuban sugar went to Europe instead of coming to this country. Would

this have the effect of making Europe less inclined to buy honey? We do not know. Again, from Government market reports it appears that the export shipments of honey from this country have been comparatively light. In the meantime it has been suggested that other countries which, on account of wartime conditions, were unable to obtain ships, have this year been sending their stocks, held in reserve, to Europe, and that this may possibly have lessened the demand for American honey. We do not know.

There have been a good many factors that have been working; and what the result will be seems to be somewhat shrouded in doubt. There is some intimation that sugar may be scarce, even tho the life of the Equalization Board should be continued and the price held down. It is our opinion that the beekeepers of the country do not need to be alarmed. If they do not lose their heads and dump all their product on the market at one time, it is our opinion that our domestic needs will take up the honey unsold in spite of what Europe may or may not do, and in spite of what sugar may or may not do. In the meantime the A. I. Root Company has gone in for a heavy honey-advertising campaign, taking as much as full-page advertising in the Ladies' Home Journal and other magazines of its class. This will mean that other bottlers will share some of the benefits of this advertising. Honey ought, therefore, to get on the table of the consumer. What the future price of honey in earlots will be is conjectural at this time; but Gleanings does not expect that there will be a slump in prices.



MUCH INTEREST has been stirred up in England over the subject of comb foundation



Metal Comb Foundation in Great Britain.

made of metal instead of beeswax. Just how thick this metal foundation is, and how it is made, we are not able to say; but apparently our British cousins, or at least some of them, look with much favor on the new product. New product, did we say? Rather it is an old idea revived. Our Mr. A. I. Root, for example, away back in 1878, 1879, and 1880 experimented with metal foundations and was able to get combs built from them, and, as the writer now remembers, brood was raised and the bees stored honey in them. But the coldness of the metal base, and the expense of the product, caused him to drop it. He then tried wood-veneer foundation; but the difficulty of manufacturing the article caused him to drop that likewise, notwithstanding he succeeded in having the bees build combs on it. During the past summer our Mr. Mell Pritchard tried wood-base foundation again, and succeeded in getting combs. But the combs were not perfect, because the foundation, or, rather, the cell-wall indentations on the wood veneer, were imperfect.

Very recently various substitutes for wax

in comb foundation have been tried out in California; but with what degree of success we are not yet advised. It appears that while the combs built from "pure metal foundation" in England, have not yet gone much beyond the experimental stage, the result seems to be hopeful. The claims made for it are these: Durability, sterilization in case of disease, safety of bees in moving, and elimination of drone-cells. The claim might also be made by our friends across the big pond, that such combs would be stronger for extracting, allowing of a higher rate of speed in the extractor so that the combs would come out drier.

A recent talk with Dr. Phillips of the Bureau of Entomology would indicate that he does not believe in the practicability of metal-comb foundation, as he thinks it will dissipate the heat of a cluster of bees more than the aluminum comb.

The McDonald Metal Combs.

There seems to be a desire if not a movement on the part of beekeepers all over the world for a foundation that will not stretch while being drawn out into comb, so that all the cells will be worker. There is no doubt but that a comb that will stand rough usage in the extractor, and that will admit of a high rotary speed, is desirable. And this brings up the question of the McDonald aluminum combs. We have made no statement concerning these, as we desire more time to test them. However, a number are asking what has been the result of our experiments thus far. We can get the queen to lay in them, and the bees will develop the eggs into brood; but, apparently, neither likes the metal combs as well as they do those made entirely of wax. In one case last summer, where we confined a colony on nothing but metal combs the brood-rearing was spasmodic and sporadic, and finally the colony dwindled down to almost nothing. There was no trace of any disease. We are not saying that others can not succeed and have not succeeded in getting brood in these combs. It is our opinion thus far that the future of the combs lies more in the storage of honey for general extracting purposes.

We have on the metal combs in winter quarters two colonies, which we are watching with much interest.

The metal combs turned out by the McDonald Aluminum Honey Comb Co., are a marvel of mechanical perfection; and if the bees will store honey in them as readily as they will in combs of wax, there might be a great future for them. Our experiments thus far would lead us to feel, however, that for straight brood-rearing or storage purposes the bees prefer combs made of wax. We may, however, revise this opinion later on. Gleanings has all along pursued the policy of watchful waiting. For the present, at least, we do not wish anything said above to be construed as saying that metal combs will not be a success. We don't know. We are, at present, awaiting the verdict of the bees.

THE readers of Gleanings are all more or less familiar with the work of the Bureau of Entomology at Washington in beekeeping, but it may be of interest to tell

some of the more personal things about this office that do not appear in the official correspondence or in the bulletins. I have visited the office many times and have come to be well acquainted with everybody there, and therefore take this opportunity to introduce some of these folks who may not be so well known to all of our readers and to tell what they are doing.

The office is located in Somerset, Md., a suburb of Washington. It is easily reached

UNCLE SAM'S HELPING HAND

*What the Bureau of Entomology
Has Done and Is Doing for the
Beekeepers of the United States*

By E. R. Root

touch with the main office of the Bureau and with other offices of the Department of Agriculture. Perhaps it will be well to add that mail should be sent to the Department at Washington and not to Somerset.

The illustration shows the building in which the office is housed. This was built as a residence and has been leased by the Department for a period of 10 years. It is, in most respects, ideally suited to the needs of the office. The experimental apiary is

from the city by trolley, and mail is delivered daily from the Bureau's office by messenger. These conveniences and a hard-worked telephone keep the office in close



These are the employees at the Bee Culture Office at Somerset, Md. Top row (left to right)—Mrs. Marian A. Carter, chief clerk; Mrs. Faith P. Gaddess, clerk; Miss Ethel L. Coon, clerk; Miss Mabelle Michener, clerk; Mrs. Margaret B. Shoemaker, clerk. Middle row (left to right)—Lloyd R. Watson, formerly of Alfred, N. Y., then Connecticut extension man, but now in office; Mr. Stone. Lower row (left to right)—Geo. S. Demuth (you know him); G. H. Cale, formerly with Maryland Agricultural College, in office since beginning of war; A. P. Sturtevant, bacteriologist.

located directly behind the house, but does not show in the picture. The 60 or more colonies used by the office are arranged in groups of four during the entire year, and, as might be expected, are heavily packed in winter in quadruple cases. The men at the office rather pride themselves that most beekeepers think them cranks on the winter problem, but at any rate they practice what they preach. They get results too, as I can certify. Of course, almost anything is apt to happen to the colonies in the apiary, for they are devoted to experiments and not to honey-production. The vicinity of Washington is not considered a good location for beekeeping; yet it is probable that if the Bureau apiary were operated for honey alone the average crop would be in the neighborhood of 100 pounds annually, and it would come almost every year, for the management of that apiary has gone a long way toward wiping out bad seasons. But that is another story for which I do not have time now.

The grounds of the office are beautifully laid out and planted. There is nothing artificial about the grounds, which look just as if Mother Nature had done the planting, yet there are many different species and varieties of plants there which are not native to the locality. The original owner of the grounds, Dr. Jas. A. Nelson, formerly of the Office of Bee Culture, is really a landscape artist and now his former associates are enjoying the results of his labors.

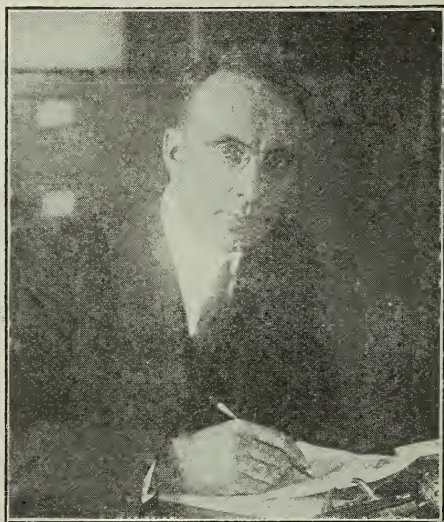
Inside the building we find five men and five women at work. These represent the office staff and, as I shall show later, there are more men out in the field all the time. The head of the office is Dr. E. F. Phillips, who has had charge of the office for the past 14 years. It does not seem that long since I first met him some 16 years ago, then a student at the University of Pennsylvania. At that time he came to our apiary to do some original research work. I saw that he had the making of an instructor in beekeeping at some one of our colleges. Later on, I had the honor and pleasure of recommending him for a position under Benton in the Bureau of Entomology, Washington, D. C. As our readers know, it was not long before he was in charge of investigation work in bee culture in the Bureau.

On the last occasion that I visited the office Dr. Phillips was absent on the road. However, the remainder of the office force were lined up before the camera and the result is here presented. C. F. M. Stone of Pasadena, Calif., was with me, and I insisted on his getting into the picture. He and the head of the office weigh about the same; so he may be considered holding down that position—in the picture at least.

On the steps from left to right are George S. Demuth, well known to all of our readers; G. H. Gale, a graduate of the Massachusetts Agricultural College, formerly of the Maryland Agricultural College, but with the office since the outbreak of the war; and Arnold

P. Sturtevant, who has charge of the bee-disease investigations of the office. Standing on the steps are: Lloyd R. Watson, formerly of Alfred University and later extension field man in beekeeping in Connecticut, but with the office since July 10 (by the way, he is another man I had the honor of recommending to the Bureau); Mrs. Marian A. Carter, chief clerk of the office, whose initials, mac., are found on so many of the letters that are sent out from the office; Mrs. Faith P. Gaddes, clerk; Miss Mabelle Michener, clerk and dictaphone operator; Miss Ethel L. Coon, clerk and dictaphone operator; Mrs. Margaret B. Shoemaker, file clerk; and on the right end our friend, C. F. M. Stone of Pasadena.

Let us see what these folks do whose work comes closest to the beekeepers of the country. Mr. Demuth is the author of the



Dr. E. F. Phillips, National Apiarist.

bulletin on Commercial Comb Honey Production and has another bulletin soon to be issued which will interest every beekeeper in the country. He was engaged with Dr. Phillips in the investigation of wintering, but since the country went into the war he has spent most of his time in promoting honey-production. In fact, during the war almost all the research work was stopped and the entire staff was engaged in extension work. Mr. Demuth has taken part in all of the extension short courses given by the Bureau. Mr. Gale handles especially the business connected with the extension work of the office and is preparing now some material, which will soon be published, to assist in certain parts of this work. Mr. Sturtevant, whom I have mentioned before, is a bacteriologist with a vision of beekeeping, which makes the work that he is doing much more valuable than if he were simply a bacteriologist. He did such good work that I

recommended that Phillips send him to California last winter to clear up the confusion in the matter of bee diseases. This Phillips did. The beekeepers of California, almost to a man, will acknowledge that he did them a splendid service. I recommended that he be sent again and now I am informed that he will attend the extension schools to be held this fall in California and other Western States to present to those in attendance the latest and best information on the important subject of bee diseases.

Mr. Watson is chiefly engaged at present on correspondence. It is the policy of the office to put the newest man on this work in order to get him trained in giving information accurately and fully, and to familiarize him with the problems of the office. It is no reflection on Mr. Watson to say that when he first went to the office a considerable number of his letters did not get by the scrutiny of the older men in the work. This happens to every new man. Mr. Watson has been a beekeeper for years and has had experience in teaching the subject. He is starting in on some investigations which will prove of much interest.

I shall not embarrass the clerical force by discussing them separately, but will put them all together by saying that if at any time there is occasion to find anything in the files or in any of the other numerous records of the office, the clerks can find it at once.

Suppose we follow a letter written to the Department of Agriculture on some phase of beekeeping. It is sent out to Somerset as soon as it reaches the Department. The mail is all opened and stamped with the time of receipt by one of the men. He also sorts the letters out to the different men who take part in the correspondence work. Matters pertaining to extension work usually go to Mr. Cale; general beekeeping questions go to Mr. Watson; letters involving some search as to the more specialized beekeeping methods will probably go to Mr. Demuth; while all administrative matters, some of the extension letters, and all matters involving scientific questions go to Dr. Phillips.

Frequently before an important letter is answered it is discussed by two, sometimes three, of the men. Something especially interesting or puzzling may be laid aside until the noon hour when all the men have lunch together and the question is talked over to decide on the best course of action or the best way to give the fullest and most accurate information. I have had the pleasure of being present at some of those conferences. The letter, after discussion, is then dictated to a machine and is transcribed by one of the clerks. When ready for signing it goes to Dr. Phillips, who reads all the mail before it goes out to be sure that everything is as it should be. When you get a letter from Dr. Phillips, perhaps he never saw the letter until it came to him for signature, but you can always tell who dictated the letter and who transcribed it by looking at the initials in the lower left

hand corner. By reviewing all the letters as they go out, Dr. Phillips (or some one else in his absence) is able to know what is going on in the office and is kept in touch with what is going on outside the office in the beekeeping world.

If the letter accompanies a sample of brood, it and all previous correspondence from the sender go with the sample to Mr. Sturtevant who makes the necessary examination, records it on a card for the purpose, and then turns the letter and his report over to one of the men to report the result. Of course, a careful record is kept of all samples sent in.

Every man connected with the office, whether on the field force or the Washington staff, is asked to send in reports of the beekeeping conditions in every county visited. They record the soil, character of the agriculture, main and minor honey plants, present development of the beekeeping industry, and all other information which may at some time be useful in answering inquiries from that county.

All letters received at the office are filed with a copy of the reply, these being arranged under the correspondent's name.



This is the National Bee Culture's new home at Somerset, Md.

There is also in the office a card index of beekeepers, which contains at least 150,000 names. With the limited supply of bulletins published, it is impossible for a copy of each bulletin to be sent to each name on this list, and the office does not maintain a mailing list for the bulletins. These lists were extremely useful during the war in sending our circulars to beekeepers and are used from time to time in announcing extension short courses in beekeeping conducted by the office in co-operation with the various extension divisions. Each card contains a record of the circulars and bulletins that have been sent out to each beekeeper, and when a letter is written from the office it is possible to tell what bulletins the correspondent already has—if not lost.

One of the lines of work undertaken early by the office was the investigation of the brood diseases of bees. Dr. G. F. White was engaged for this work soon after Dr.

E. F. Phillips took charge of the office, and he stayed on this investigation until he was transferred from the office in 1914. After that Dr. A. H. McCray took up the work and continued until he left to become State Bacteriologist of Montana. When Doctor McCray left, A. P. Sturtevant, who was then at the Massachusetts Agricultural Experiment station working on bee diseases, came to Washington and since then he has had charge of the work. In all 6,800 samples of suspected or diseased brood have been examined for beekeepers and apiary inspectors since the work began in 1906. More samples are received now than ever before.

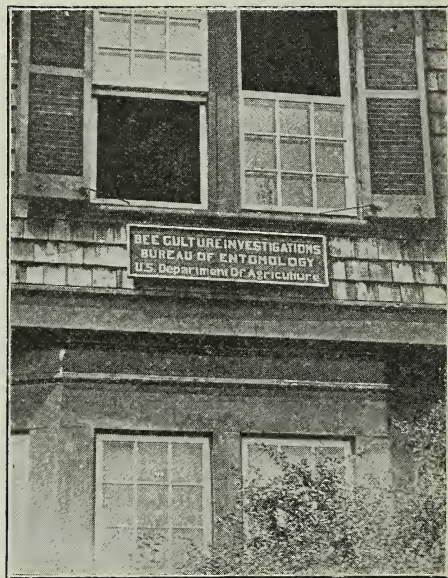
As a result of the work on brood diseases the causes of the three brood diseases have been determined and much valuable information has been gathered together concerning the methods of treatment, the distribution of the diseases in the United States, and other facts which have more or less bearing on the control of the diseases.

The Bureau has also played a large part in having the right kinds of laws passed by the various States for the control of these diseases. The early laws placed the power of inspection in the hands of an inspector appointed by the governor of the State. Naturally this sometimes led to the appointment of men who had served the governor faithfully during elections. Not all of the early inspectors were politicians, but some of them were. It was evident that inspection needs careful supervision in order that the work might cover the State and that favoritism might not be shown to the friends of the inspector. The Bureau of Entomology early advised that the inspection be placed under the supervision of the State entomologist's office in each State. At first beekeepers were inclined not to approve the plan, but now that it has been in operation in several States for years it is evident that it is the best plan that can be devised.

It is the function of the scientific investigator to explain methods, to tell us why the methods work rather than to discover the methods themselves. So in the matter of bee diseases. Before the Bureau of Entomology did its work on bee diseases we used the shaking treatment for American foul brood without knowing why it is necessary. In the case of European foul brood the approved methods of treatment were perfected by beekeepers after the work of the Bureau was begun. It is true that some European beekeepers had used the requeening method for one form of disease years before, but they did not know that there are two diseases, and, as a result, the advice was almost useless. The Bureau of Entomology has added much to our knowledge of the way in which the latest methods for the control of this disease may be employed; and now that these methods are well known, the Bureau has been able to show how the disease may be prevented by the application of good beekeeping practices. It can not be stated too strongly that prevention is more impor-

tant than cure, and this is the chief effort of work of the Bureau with this disease.

When the bee-disease work had progressed to the point where it was being handled well by the various States, Dr. Phillips and Mr. Demuth took up the wintering problem. This work is well known. Here again no new methods of wintering have been devised, but the result of this work is that now we know *why* some methods are successful and *why* others are failures. It is the "why" that counts, and that is what the scientist is always after. Not only have they been working for the past several years on this problem, but they have tried their best to get the beekeepers of the country to



Here is the official title of National Bee Culture headquarters as posted on the walls of the new office at Somerset, Md.

adopt intelligent methods of caring for their bees.

There have been other workers in the Bureau who have contributed greatly to our knowledge of bees. The work of Dr. D. B. Casteel on the methods of wax-scale manipulation and of pollen-gathering, that of Dr. Burton N. Gates on temperatures of the colony, and other such work on bee behavior are all valuable and all have a bearing on practical beekeeping.

It will be recalled that the expression "bee behavior" is one which is now common in beekeeping, and this is the result of the emphasis which the Bureau has placed on this work ever since Dr. Phillips has been at the head of the work. Bee behavior is the foundation on which all good beekeeping rests, and the Bureau is right in placing so much emphasis on it. Dr. Jas. A. Nelson's work on the development of the bee

and R. E. Snodgrass' work on anatomy are both the products of this office.

In addition to the investigations and extension work, it is the policy of the office to make that branch of the Bureau a sort of storehouse for information on all beekeeping subjects. Several years ago Dr. Phillips told us thru Gleanings about the immense file of literature on beekeeping at the Bureau. This has been growing ever since it was begun and is today doubtless the best bibliography on beekeeping in the world. Papers and books are there listed with a record where they may be found if they are not in the library of the office. Dozens, perhaps hundreds, of papers in foreign languages have been translated and placed in the files for references, especially those bearing on the lines of investigation undertaken by the office. These, together with the library of the office, constitute the greatest compilation of beekeeping information in the world.

And now for an important point. All of this information and all of these records are in a frame building in the suburbs of Washington. I stated earlier that this building is convenient, but it has one most serious fault. The Government might be able to lease another building if this one should burn, or it might then build one fit for the preservation of the records after they are all destroyed. Why is this not done before it is too late? This is something which we

should bring before Congress and keep before that body until the office which represents us at Washington is housed in a fire-proof office and has all the equipment which it needs. It should by all means be in a building where the records are as safe as it is possible to make them. It would be a matter of personal loss to every intelligent beekeeper in the country and in the world, if the present office were destroyed by fire.

The extension work in beekeeping will be discussed in a later article. All of the work, that in Washington as well as the extension work, is paid for out of the appropriation of \$35,000 made by Congress. During the war it was \$50,000. When Dr. Phillips went to the Bureau of Entomology the annual appropriation for beekeeping was \$8,000, and this has gradually been increased from year to year. It has not increased fast enough, however; for there should be more extension men in the field, more men in the Washington office for investigation work and for an enlargement of the work of the office along all lines. I say this, not because I wish to see the present beekeepers receive more aid from the Government than they are entitled to, but because beekeeping must grow.

It has been so small thing for beekeeping to have the growing office of the Bureau of Entomology striving to help it in every possible way, aiding beekeepers individually and collectively with their problems.



Convalescent soldier boys studying bee culture at Ft. McPherson, Ga. Many of the 30,000 still in Uncle Sam's 75 army hospitals have taken a keen interest in beekeeping.



THE OLD LESSON TAUGHT AGAIN

A Careless Shipper of Comb Honey Suffers the Usual Loss

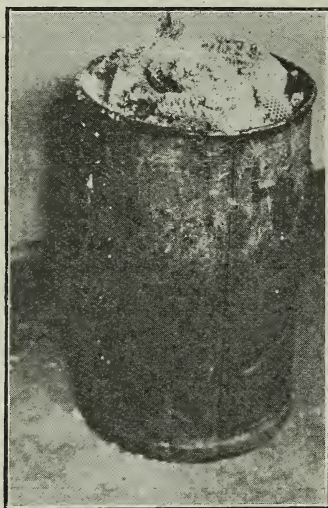
Some lessons have to be taught and re-taught, repeated and re-repeated, in beekeeping as in every other industry. One of these is the caution as to packing honey for shipment—either comb or extracted. Constantly and everywhere the individual shipper is poorly packing his honey, with consequent loss to himself and detriment to the whole beekeeping industry.

It is the careless packer of honey who is today to blame for the high freight rates (and going higher) on all honey shipments. The careless, thoughtless honey-shipper makes the whole honey industry suffer by his perverseness.

A shipment of comb honey received a few days ago by the Airline Honey department of The A. I. Root Company at Medina was so badly damaged because of gross carelessness in preparing it for shipment, that we want to let it, with the aid of our camera, serve as still another warning against carelessness in shipping the beekeepers' product.

This honey came from a point in New York State, not far from Buffalo—a distance of about 200 miles from Medina. The quality was excellent, bringing a good round

price. Yet when the producer of this fine honey came to ship it, he put the comb-honey cases into any sort of old boxes (as will be seen in the accompanying illustration),

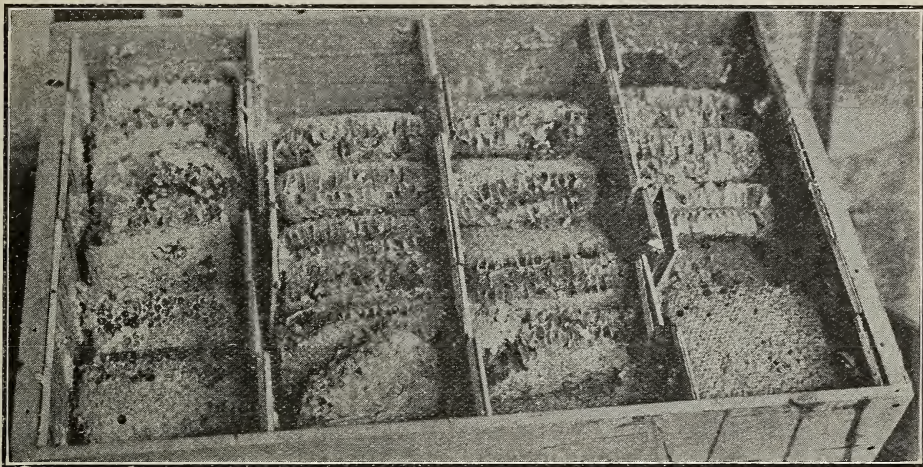


Some of the broken and drained comb honey ready to be melted up.



Here are the boxes in which the ill-fated comb-honey shipment was made. There was no packing placed inside any of these boxes to protect the frail honey shipping cases.

FROM THE FIELD OF EXPERIENCE



How the comb honey was broken out of the sections and ruined in this careless shipment.

without packing the cases in such boxes in any way. The comb honey was allowed to shuck about and fall and tumble around in these boxes while coming a distance of 200 miles by local freight shipment. There was not a mark on a single box to warn the freight-handlers to be careful as the contents was fragile, altho as a local shipment this honey had to be transferred from one car to another several times.

When it reached its destination this fine comb honey was a mess to behold, and a worse mess to clean up. In all there were 102 cases of this honey. Thirty-six of these cases were so smashed that the honey had to be melted up; the honey in 32 more of these cases was broken out of the sections and sold as damaged honey to local retail merchants; the remaining 34 cases of honey, while not broken out of the frames, were disposed of as "damaged goods." The loss to the beekeeper was one-third the price of his honey, and the purchaser was at all the trouble of cleaning up the mess without a dollar's profit in the transaction—all because of carelessness in shipping.

Had the shipper taken the little pains necessary to have packed the honey cases even in these old boxes in straw—top, bottom, and sides—probably none of it would have been damaged. He also should have plainly marked the boxes: "Fragile. Comb Honey. Handle this side up with care."

Many shippers of comb honey evidently do not know the requirements for shipping their product as laid down in the rules of the U. S. Consolidated Freight Classification. These official directions for preparing comb honey in sections for shipment are word for word as follows:

"Comb honey in section frames, in wooden boxes, with or without glass fronts, two

or more enclosed in wooden boxes only or in crates, must be protected by a pad of hay, straw, excelsior, or similar material, not less than 4 inches thick in the bottom of the box or crate, and the package plainly marked on top "Fragile—this side up."

Editor Gleanings.



DO DRONES HELP INCUBATE?

They Find Friends in Mell Pritchard and the Editor of the Bee World

One of the enjoyable moments of the beeman's life is when he finds some one of world-wide repute expressing an opinion which exactly coincides with his own idea—especially when such able authorities as E. R. Root, Iona Fowls, and Dr. E. F. Phillips accuse him of being something very like bone-headed for entertaining such an idea.

It was my good fortune to find such an article in the September issue of the Bee World from the pen of its able editor, A. Z. Abushady, under the heading, "Our Parting Friend." I am herewith submitting this article, with the request that it be published in Gleanings, so that the aforesaid Fowls, Phillips, and Root may take notice.

Mell Pritchard.

[The following is the article that Mr. Pritchard requests to be printed.—Editor.]

OUR PARTING FRIEND.

Our humble friend, the drone, is due to part this month, if he has not already parted, even from the largest modern apiary in Europe where queenlessness is not overlooked. He is usually the subject of abuse. Very few indeed appreciate his domestic and racial role.

An observatory hive will clearly show you the drones clustering over the brood. There is more

FROM THE FIELD OF EXPERIENCE

weight in the suggestion that they help in brood incubation than in contending that they benefit by the animal heat of the brood. The drone is a big fellow, and one who carefully looks after his meals. Altho an example of idleness, his metabolic heat cannot be insignificant, and it is peculiar that he often chooses the brood area for clustering.

In criticising a comment by John Anderson, a leading contemporary remarked that so far as heat production is concerned, the drone is valueless, since coincidentally the time when he is destined to exist at least with all ordinary strains of hive bees is just the time when the hive heat is excessive. This remark is hardly correct from a modern apiarist who has pride in the general control of a colony in a modern hive, provided the latter is a model of perfection and not of cheap accommodation. Under favorable circumstances, the regulation of the temperature of the hive should not be left mainly to the bees, as they have undesirable ways of their own when their patience is lost in counteracting the atmospheric heat by their method of ventilation. Such artificial ventilating devices as met with in the "J. G. D. Ventilator" (which can be fitted to the floor board of any hive), the "Insulator Hive," the "Hygienic Hive," and Baldwin's "New Pattern Hive," are amongst the modern means for helping the apiarist to become a bee-master and not merely a keeper of bees.

It is no exaggeration remarking that with intelligent management the drones may be rendered to contribute in whatever small degree to the incubation of the brood whilst the workers' attention would be diverted to more important work for the time being. They need not desert a super in a cold night for instance, however the number of the deserting bees may be small. Yet, the number of drones in a populous hive is comparatively trivial, and the subject is not worth a lengthy discussion, but our point is to emphasize that the drone has a domestic function as well as a racial one. As to whether the question is worth at all any practical application, especially to the busy apiarist, is a different matter.

Regarding the second and most important function of the drone, C. P. Jarman tells us: "The results of breeding by selection are too evident throughout the domestic animal world to need emphasis, and experience has shown that the male has a greater influence than the female on the progeny. There is no reason for assuming that bees differ in this respect; for the fact that drones have a grandfather, but no father, does not affect the established principle. The system of breeding our young queens from the best queen mother is a consequence of our incomplete control in mating. Given an absolutely isolated apiary, the conditions above suggested should be reversed and the best queen used as the drone-rearer."

HOW LONG CAN THEY LIVE?

Remarkable Case of Bees Surviving in a Hive Closed for Seven Months

Some time during the latter part of last July, I found a strong colony of bees in one of my out-apiaries with a few cells of foul brood (American). As some years of experience with foul brood has convinced me that it does not pay to temporize with it, I shook the bees and, shutting the old hive up tight, hauled it home and put it in the

basement of our house, a place where I keep such things until I am ready to make the combs into wax.

This basement is a tight room, perfectly dry, containing the furnace that heats the house, and is kept warm at a comparatively even temperature of about 60 degrees at all times.

Now this hive of brood, taken from a strong colony in the height of the season, undoubtedly contained much brood that hatched into bees after the hive was shut up. I frequently heard these bees humming in the hive, but did not do anything to it until February 26, when I was ready to make the combs into wax. When I opened the hive, I found to my astonishment that there was quite a bunch of live bees in it. As a few bees were flying outdoors, I set them out and kept close watch, but only two or three bees left the hive; so I returned them to the basement until March 1, when I set them out again and examined them. The bees were perfectly normal in appearance, with abdomens not greatly distended. There had been some spotting of the combs, tho not nearly so much as we frequently see in colonies that come thru all right.

To sum this up: a small colony of bees, that had never had a flight, had been confined to their hive in a dry, warm, and moderately well-lighted room for at least seven months and were in good condition.

Perhaps some of you who winter your bees in cellars may be able to get something out of this. I can see some possibilities, and, just as a matter of experiment, I may try it again with something more nearly approaching a normal colony of bees.

Grand Junction, Colo.

J. A. Green.

A DRONE'S GRANDMOTHER

Thinks Dr. Miller Has Told Only Part of Truth

Last June, page 369 of Gleanings, Dr. Miller got me started and I have been dreaming about my mother and grandmothers ever since.

Last year I bought queens from nine different breeders and my average yield from the different strains ran from 150 pounds to 44 pounds. The apparent loss from not having all of them best would buy six new queens for each hive or amount to \$200.00 in cash.

I had everything all planned to raise drones even to saving 20 drawn drone-combs, when the doctor upset everything by saying a drone has no father and inherits all his good or bad qualities from his grandmother. Then in big, heavy type he says, "Don't do anything about the drones."

Confession is good for the soul and the doctor confesses that he is only a recent con-



FROM THE FIELD OF EXPERIENCE



vert to the truth, and what I want to do is to prove that he has only a part of the truth. I hope to prove that to let the drones take care of themselves is a fallacy. Suppose numbers 1, 2, 3, 4, and 5 represent hives that give 100, 50, 0, 150, and 200 pounds respectively, and that we raise a queen from each, numbering the new hives 101, 102, 103, 104, 105 and that they give 200, 150, 100, 50, and 0 pounds respectively. Now we have five families of mothers and five of grandmothers. To make matters more simple we dispose of hives 1, 2, 3, 4, and 5, but we will speak of breeding from 1, 2, 3, 4, and 5 when using drones from 101, 102, and 103, etc., because the former hives contain the grandmothers of the drones we use. The best hive we have is hive 101, with 200 pounds surplus; so we breed from it and take the doctor's advice and don't do anything about drones. Accordingly, if honey-gathering qualities are transmitted as readily by the drones as by the queen we would get, the following season, these results: grandsons from hives 1, 2, 3, 4, and 5, five mothers from hive 101—result 150, 125, 100, 175, 200 pounds respectively or an average of 150 pounds of honey.

Now let us breed my way. We will use queens from hive 101 and prevent all drones flying excepting from hive 105, which gave no honey, but whose mother (the future grandmother) was at the head of a colony that gave 200 pounds. Then we have all queens whose colonies give 200 pounds, a gain of 250 pounds of honey in our five new colonies or a gain of 33 per cent over the **do-nothing way**. I hope the Doctor sees the truth of the above figures and will confess again.

I presume that the next time the Doctor will upset us all by dragging the drone's grandfather into the argument. I was glad he did not do it this time or I would have given up in despair.

In the above calculation (in order to simplify matters) I have left out the idea that some queens, as well as drones, will be better and some worse in spite of parentage.

When the Doctor says, "and please keep in mind that with the way I advise the poorest queen in the apiary will have just as good drones as the best," he gives parentage all the credit and entirely overlooks environments and everything else that may improve or deteriorate the progeny; such as cell-starters, cell-finishing colonies, and a dozen other circumstances, either premeditated by the queen-breeder or purely accidental, that would make not only the queens vary in quality but also the drones, while it would be just as impossible to have the drones all of the same quality as it is to raise queens of all the same quality.

Hammonton, N. J.

C. E. Fowler.

THE HONEY CAKES OF ITALY

How Daintily They Are Made and How Quickly They Are Sold

In no country is honey more used by the people than in Italy, where its wonderful qualities, medicinal and nutritive, are fully recognized. In Italy there are several very fine honeys; but the coarser kinds are in great abundance. There is one kind in particular, gathered in the Apennines, of which much use is made by the Italian populace. With it they make their most delicious and fragrant honey cakes, which may be bought from the street vendors hot from the griddle-like frying pan. There is nothing more dainty, altho this honey, produced by the bees from the fir, pine, birch, and other trees, is disagreeably dark, rank, and strong.

In particular does one find these honey-cake vendors in Naples and other cities of southern Italy. Humorous, good-natured, either singing while at work or uttering jibes and jests to the invariable crowd of lazzaroni by whom he is surrounded, waiting for the delicate "regale," the honey-cake maker is a great favorite. Before him stands a table which he keeps scrupulously clean. At one side of the table is an upright, from which (and at right angles with it) projects a piece of iron in the form of that instrument called by laundresses an Italian-iron. At the opposite side of the table is a small earthenware furnace or pot filled with lighted charcoal. From a nail at the side of the table hangs a frying pan with a short handle—that kind known to us as a "saute-pan."

Having placed on the table a small quantity of polenta, which is the very fine meal of the maize or Indian corn, he pours in a quantity of the black honey and works the whole into a paste with a pair of wooden instruments, and does not touch the mass at all with his hands.

When the dough is stiff enough he further works it with a rolling-pin, rolling it this way and that until at last he has it in the shape of a gigantic German sausage. Taking this in both of his hands he beats it against his Italian-iron till it is perfectly white. Now he rolls it out till it is no thicker than a dollar; then with a tin mold of fantastic form he divides it into small symmetrical pieces. Meantime he has placed upon the furnace his saute-pan, charged with sufficient virgin olive oil to fill it half full. The moment the oil begins to boil he throws in his little bits of paste, and fries them until they are a light brown.

They are now ready, and very soon disposed of, to be eaten hot. No sooner is his paste exhausted than he begins another batch, for the honey-cake maker, especially in the large towns, has always customers waiting.

The average tourist who has the curiosity

FROM THE FIELD OF EXPERIENCE

to taste this dainty usually finds it so much to his liking that, as long as the honey cakes are procurable, a plateful is bought every day for his own particular use.

Oddly enough, too, in the Island of Bourbon, a dependency of the French Republic, in the Indian Ocean, the folks, both white and colored, use in somewhat similar cakes a most delicious and fragrant honey from the wild bee. The hue of this honey is a light green, and from the heat of the climate it is so liquid that it is always kept in black wine-bottles. The Bourbonese work crushed bananas into the dough, with a most pleasing result.

A. Tegnier.

Rayleigh, Essex, England.



BEEES IN THE OKANAGAN VALLEY

A Fruit and Vegetable Country Where Bees Are a Necessity

The Okanagan Valley, B. C., extends from the border line at Oroville on the south to Salmon Arm on the north, but in this article reference is made chiefly to that part of the valley lying between Penticton and Vernon, B. C., and adjoining Okanagan Lake.

The population of this area is probably about 20,000, most of whom are fruit-farmers, with a fair proportion of vegetable-growers at the northern end. The chief products of the valley comprise apples, pears, peaches, plums, apricots, cherries, grapes, melons, tomatoes, celery, and onions. The average rainfall being but 12 inches in the year, irrigation is general except in the extreme north.

More than \$4,000,000 was received by Okanagan growers last year, from which it may be inferred that there is considerable fruit bloom to be pollinated by our friend the bee. Unfortunately, the profusion of fruit blossoms in the spring is largely offset by comparative scarcity of wild blossoms, and during the latter part of the summer in many districts there is a meager supply of nectar. Alfalfa is very generally grown as a cover crop in the orchards, and where this is left to blossom the problem is solved; but, in most cases, it is cut for feed and the bees get but little from it. There is, however, a fair sprinkling of white Dutch clover in many parts, and some areas have a great deal of sweet clover as a roadside crop. Where there is any seepage from the irrigation flumes this plant flourishes in abundance and is constantly covered with bees. A good deal of sage also grows here and helps out considerably.

One of the largest apiaries in the valley is that of L. J. Harris, who is the Provincial bee-inspector for this district. Mr. Harris operates for both comb honey and extracted, and, I understand, supplies the C. P. R. with a good deal of the former in small "individual" cartons for use in their dining cars.

At Kelowna, further south, the most extensive bee business is run by D. E. McDonald, whose apiaries are at Rutland and Ellison, both a few miles inland.

D. B. Lyons, also of Kelowna, keeps quite a large number of colonies of Italians as aids to his main business, which is the growing of cucumbers, grapes, and tomato plants under glass.

A little further up the lake is Okanagan



A typical British Columbia apiary, that of F. R. Gartell at Summerland, B. C.

FROM THE FIELD OF EXPERIENCE

Centre, the home of at least one bee enthusiast in the person of N. H. Caesar, an old timer in the valley and a beekeeper for the love of the business. Mr. Caesar believes in sweet clover, and always has part of his land planted to that crop.

Further south we come to Summerland, where there are quite a number of beekeepers. The accompanying photo is of F. C. Gartrell's bees, located at Trout Creek Point close to the Dominion Experiment Farm. I consider this district one of the best bee locations in the Okanagan Valley. Mr. Gartrell averaged 100 pounds of extracted honey per colony last season, and all reports obtained by me were good.

Penticton, at the foot of the lake, does not seem to have as many apiarists as most of the other districts in the valley, altho I heard of some very good yields. The accompanying photo shows some of Alfred Jones' hives on his ranch above the lake. He has a fine location and, I believe, has done well this season.

Naramata, "The Smile of Manitou," lying opposite Summerland, has until recently overlooked the bee industry, but has gained several new recruits this year. I have recently instituted a series of small bee-houses



Beekeeping and orcharding are practiced together in British Columbia.

placed on certain of the fruit ranches and operated by me on profit-sharing terms. The reason of the arrangement is that while most of the local fruit-growers realize the benefit of bees to their orchards and are perfectly willing to install them, they are, in many cases, unable to devote the necessary time and attention to them. The houses I am installing will each accommodate nine 12-frame colonies, all on one level, and the cost works out at a little less than the same number of hives with the necessary winter cases. I am a firm believer in the bee-house system, and have this season built one to accommodate 16 colonies. I also much prefer a 12-frame colony with 8-frame supers, as recently described in "Gleanings."

George Weaver.

Naramata, Okanagan Valley, B. C.

LIQUEFYING HONEY

Top of Furnace a Fine Place to Accomplish This Work

In Gleanings last winter, Mr. Byer spoke of liquefying honey on top of the furnace. I have had a little experience that way and consider the top of a furnace the ideal place to liquefy honey. We burn natural gas for fuel and can regulate the heat to a degree. On top of the furnace there is three or four inches of lake sand and by laying the cans on their sides and covering with a hive cover to help retain the heat I found it a very satisfactory and safe way of liquefying. I think I got quicker results by emptying the honey into 10-pound pails as soon as it would pour from the large cans, and then setting the pails on top of the furnace to finish liquefying.

In the fall of 1917 I ran my honey from the settling tank directly into 10-pound pails and have had to liquefy nearly two tons of it, but it is quite safely and easily done if not too much heat is used. I think about 24 hours is the time required for 10-pound pails with some hive covers over the top of them. I have frequently had 150 pounds or more on at one time in pails and cans; but I did not care to have more than this amount liquefying at one time, for fear it might injure the honey if kept in a lukewarm condition too long.

Late this fall I found the top of the furnace also a very good place on which to warm up some extracting supers of honey. Another way to warm up cold combs of honey for extracting is to put two barrels or boxes just far enough apart and set a pile of supers on, with a lighted lamp underneath the supers and a cover on top of the pile. The heat should be carefully watched, tho, or the combs may melt. J. E. Battram.

Kingsville, Ont.

EXTRACTING IN HAITI

A Great Chance for Improvement in Haitian Methods

It may be of interest to compare the methods of work used in Haiti by native Negro beekeepers with the best of modern methods and to consider our problem of adapting our best American methods to the conditions under which we work in this island. Perhaps a description of an extracting at one of the apiaries which we have recently taken over will give you a fairly good idea of conditions.

The preparations for extracting were made during several days prior to the night of the great event, by taking off and storing in the honey-house all the combs to be extracted, some of them containing sealed brood which had been above an excluder,



FROM THE FIELD OF EXPERIENCE



excluders being commonly used. This honey-house is of wattles daubed with mud and has solid doors and no windows, thatch roof, is not screened and is not bee-tight. These various items make it advisable to extract at night.

When all was ready the beekeepers from near-by apiaries to the number of a half-dozen came in to assist, and along with them a dozen or more volunteers to help from the fun of it, or for the honey they could eat or steal. The proprietor had to be there also from start to finish, for there was not one who could be trusted not to carry away honey if there was an opportunity, and attempts are made under his very eyes. An apiary cannot be left alone, but someone must always be there to prevent frames, honey, or whole hives from being carried off.

A moonlight night was chosen so barrels could be filled outdoors and combs could be put on the hives readily after they had been emptied. As soon as the bees had ceased flying, work began. One man took frames out of supers and brushed off the few remaining bees, handing the frame to another who handed it to one of the two uncappers who were seated, one on each side of the uncapping-tub. From the uncappers the frames were passed to a man who piled them in another tub from which they were taken by another workman and passed up to the man at the extractor. The extractor was placed on a shaky platform about three feet high—high enough so that a funnel and barrel could be put under the extractor gate. At least two men on this platform managed the extractor and removed the empty combs, passing them to a man who handed them to another who passed them out the door to another who handed them to another who placed them in the empty supers. Another man, no, two men, distributed these supers thru the apiary while the beekeeper, with a helper, set the supers on the hives without much regard as to whether the frames were spaced, or whether or not the brood-chamber was full, as many frames had been removed from the brood-chamber for extracting. In a week or so after the bees had quieted down from the cleaning up of combs and house and the robbing which ensued during the next few days, the beekeeper would space combs and put things to rights.

When the first barrel was full and running over, the man who was watching the funnel took it out of the barrel with the stream of honey running out of the funnel, and attempted to put it up on the edge of the extractor to let it drain. The neck of the funnel came into contact with the revolving reel, knocking off the neck of the funnel and breaking an extractor basket screen. Fortunately a supply of screens was on hand for such accidents, as was also an extra set of gear wheels, and the ex-

tractor was soon running again. Honey was spilled all over the place, tho there was enough dripping around before that, and the barrel had to be moved outside the house, too many men being inside. Then the funnel had to be repaired as best they could. The neck was stuck into its place, well wrapped with rags, and then placed into the bung of the barrel. Of course the joint leaked sadly and honey ran out all over the barrel. Then, they insisted on filling every barrel to overflowing, after which the outside of the barrel was wiped by someone's hand, and put back in the tin or into somebody's mouth. Now, much more could be mentioned in this connection, but perhaps it would be as well to leave it to the imagination.

It is easily seen that with so many men working in the extracting-house, passing combs here and there, and being continually in each other's way that not very efficient work was done. There were some advantages, however, in doing the work after night, when it was somewhat cooler than during the day and the doors could be open, for that small room was oppressively full of sweating negroes, and some ventilation was desirable, to say the least. There were 13 men in that room at one time, all working.

Such is honey-extracting according to Haitian methods, and you may guess that the next extracting will not be done in quite the same manner. I wanted to see one extracting in their own way just to see what I was up against. I saw. I am glad to say that beekeeping in some parts of the Dominican Republic is rather better than in Haiti.

E. L. Sechrist.



BEES SHIPPED IN POUND PACKAGES

Need Air and Ventilation Even More than They Need Water

Articles that have appeared in *Gleanings* in regard to shipments of bees in pound packages and the need of supplying the bees with water en route, are of great interest to any one who contemplates either buying or shipping bees by the pound.

I have in the past bought bees in this way; and, as my office is near that of the express company, I have been called in a great number of times to advise how to treat the bees received in bad condition. In case the bees had water-bottles in the packages, the hole in the bottle was sometimes stopped up; and, of those I bought, fully 25 per cent arrived in bad condition. I have received bees in pound packages that had only candy feed—no water container—shipped from the same distance (California) that came thru in better condition than those having water. In fact, some of these pound packages having only candy came thru in what I would call

FROM THE FIELD OF EXPERIENCE

perfect condition, there not being over a dozen dead bees in a two-pound package.

In those packages that showed many dead bees I found that if they were at once sprinkled with water, it tended to revive the bees; but so far as their being of any future use was concerned they were practically worthless.

In one case a shipment was by mistake addressed to our neighboring village of Seattle, and held there for about 10 days before being sent to Tacoma. On arrival the bees appeared to be about all dead; but I watered them at once with a sugar syrup, and an hour later when I dumped out the package, fully one-fourth of the bees were alive and able to fly and enter the hive in front of which I placed them. However, three days later they had dwindled to the vanishing-point.

My conclusion is that the bees do not need water as much as they need more air and ventilation in transit, and that the shipping cages as at present constructed are not properly made. The ends being in the shape of a rectangle, it is possible for the

cages to be so placed in the express car that the bees are smothered, either by being placed against the wall of the car or by having other packages piled so close to them as to shut off the air from the bees. In some cases the express messenger has even placed the bees alongside of the steam or heating pipes in the car to keep them warm. It is possible that a six or eight-sided cage might be an improvement.

Another thing that should be impressed on the buyers is that it is a very risky proposition to buy pound packages unless the purchaser has some brood to give the bees upon arrival.

My experience has been that, even when queens start to lay two days after arrival, as is often the case, by the time the brood is ready to hatch, the bees have so diminished in numbers as to be unable to take care of the brood which therefore chills and dies, and the bees soon dwindle out. In the future I shall see that I have some brood to give the bees upon arrival, and also, if possible, a week later.

Tacoma, Wash. T. Dwight Whitman.



This apiary of Geo. H. Rea at Reynoldsville, Pa., is in a 30-foot clearing in heavy timbers. The bees' flight is up and over the tree tops.

THE directions for feeding bees in winter, given on page 770 of December Gleaning, are very much to the point and very valuable. However, I looked in vain to see if candy suitable for feeding bees in winter could be made from a good grade of brown sugar. It has been difficult for some beekeepers to get any other kind this year.

* * *

If there are any beekeepers in New England in need of sugar for bees, they should apply for certificates at once to E. S. Brigham at Montpelier, Vt., and then send to the Montpelier Grocery Company, enclosing the certificate.

* * *

"Why do labels and advertisements continue to use the hackneyed expression, 'Pure Honey?' " asks C. M. Elfer, page 797. Well, I expect it is because we have got into the habit of it and haven't stopped. We are sometimes told that we can't make a man honest by law; yet it was but a few years ago that enormous quantities of impure honey were placed on the markets, while today such a thing is unheard of.

* * *

F. Erie Millen says, page 778, that there are quite too many kinds of honey on the market. He would have the honey graded so that all of it from one state or province would be uniform. There is such a constant variation in honey from different sources that this would seem impractical. Clover honey is still clover whether it comes from Vermont or Ohio, and the same with buckwheat; but, if we blend Ohio buckwheat and clover, who would care to buy it?

* * *

J. L. Byer calls attention on page 795 to alsike clover as one of the most valuable of honey plants. I believe he is right. Where it is grown freely, the number of colonies that can be kept in one location is surprising. From where I live a line running nearly west for six miles would include four large yards of bees of some six hundred colonies. To the east, north, and south are other large yards, and yet all seem to do well. This would give some 12 or 15 colonies to the square mile.

* * *

On page 770 the Editor speaks of the use of nullomoline in making candy for feed for bees in winter. Will he tell us what it is made from, how or where it can be obtained, and at what price? [Nullomoline is a trade name for invert sugar syrup, having many of the characteristics of honey. It is prepared and sold by the Nullomoline Company of New York City, and usually costs from one to two cents above the mar-



ket price for granulated sugar. We have used it for making queen-cage candy in preference to honey as the latter may or may not contain bee disease.

Nullomoline will answer for making beecandy when the bees are not on the road over 48 hours. After that the candy is liable to harden so that the bees starve to death. When honey is boiled for making queen-cage candy it nearly ruins it for the purpose.

* * *

Those 21 illustrations commencing on page 771 are well worth the careful attention of every young beekeeper, for they are true to life and human nature. Selling is one of the great games of life, whether we enjoy it or not; and the one who knows exactly the market value of goods holds the trump card. To know what the buyer thinks is often of much more value to the seller than what the buyer says, and to be able to know is an art well worth cultivating. I used to wonder how those reporting market prices could tell within a cent or a half-cent what certain produce was worth, but after visiting city markets and watching wholesale and retail merchants barter with each other I soon learned how it came about. I am not sure but it would well repay any young man who has much trading to do, to visit some of our larger city markets and watch the game as it is played by those who know how. Not that I would have any one learn how to get the better of his neighbor, but rather that he should be able to prevent his neighbor from deceiving him.

* * *

There are some pretty good things in that story, "Anne Lester and Daddy Lowe, Beekeepers." (See page 779.) The following will bear repeating: Anne says, "I beg to announce that some day I am going to write a book about beginning with bees and every other sentence is going to say that the people who won't knuckle down to read and study"—"Deserve to be stung," finished Jack. "Be comforted, they quite likely will be." Again, Anne says, speaking of Daddy Lowe: "He keeps me busy admiring him. Why, this fall as soon as the bees were ready for winter, he started planning for next season. So much increase, so much foundation, so much this and that—a few new covers, and so on. Then he took a careful inventory. Counted up everything he had and ordered everything he didn't have." Jack replies, "No early spring ever yet sneaked in on Dad and found him hollering for supplies."

If all beekeepers were to follow Daddy Lowe's methods, how it would make the supply manufacturers and dealers hustle thru the winter!

IN these days of industrial unrest, insidious Bolshevism, daylight hold-ups and murders, low salaries and high wages, and a shortage of nearly all necessities combined with incredibly high prices, it is not strange that the spirit of hospitality has suffered. Stories of colonial days or of the old South, when nearly every family kept open house and the chance guest was welcome to remain as long as he pleased, are delightful; but I have no desire to go back to just that sort of hospitality, for the friends we most enjoy entertaining are not apt to be the ones who arrive unexpectedly and remain indefinitely.

But I deplore the fact that on account of the shortage of household help and high prices of food most of us are unable to entertain each other as often as we could wish. When I say entertain I do not allude to formal parties. I know just one woman who says she enjoys receptions, and as for the men, there never was one who regarded with anything but horror the prospect of shaking hands with a receiving line, and later standing with a row of other unfortunates, holding a cup and plate containing a tiny sandwich or cake, balancing wearily from one fallen arch to the other with his face set in a sickly smile. Between you and me, the only drawback to being the mother of two fine boys is the prospect that some time, when they are old enough to marry, I may have to give something like a reception for their wives.

The kind of a party favored by men includes a good, square meal, served at the regular time for a meal, with a good time afterward. After such an evening, unless one is hopelessly dyspeptic, he can go home and sleep the sleep of the just, untroubled by the wakefulness or nightmare that is apt to follow "light refreshments" served at the close of the evening. But, someone objects, there is no way of entertaining your friends that entails more work than a dinner party, and one can entertain so few at a time that way. That is quite true, and it is why I am going to talk about

Picnic Suppers.

I don't mean the picnic meal eaten out of doors, the kind that was always understood by that term when we were children, but the modern co-operative meal which gives us a chance to meet our friends often with a minimum amount of work for each housekeeper instead of a maximum for one. A visitor in our town once said she would always remember it as "the town of the Picnic Supper." Not that picnic suppers are confined to Medina, but, like dandelions, they surely do flourish here. Scarcely a week passes that I am not called up and requested to come to a picnic supper, accom-

OUR FOOD PAGE

Stancy Puerden

panied by my husband and some food, the latter probably even more desired by the committee than the former. Church organizations, clubs, lodges,

King's Daughters' circles, neighborhood gatherings, and family parties are fed by picnic suppers.

Ever since I have been a housekeeper I have belonged to a little social club composed mainly of old schoolmates. The members meet one evening a week with their work for a couple of hours, at the various homes in turn, no refreshments being served. About once a month we have a party and invite our husbands. The first few years a committee of four was appointed for each party, to act as hostesses and furnish all the refreshments. In time these parties became somewhat of a burden to the four on the committee. Finally one bright member suggested the picnic supper. We never went back to the old laborious method of entertaining the club, and having successfully held these picnic suppers for so many years, we have a very good working system.

A committee of three, appointed for the season, plans the menus and notifies each member what she is to take. This work is done as far as possible at the previous club meeting, to save telephoning. It is understood that each member is to bring one dish, such as fried chicken, scalloped potatoes, a salad or cake, and six sandwiches. The sandwiches insure there being enough bread and are easier to serve than bread and butter or rolls. For the first year or two the committee did not designate what each member should bring, aside from the sandwiches, thinking that in a club of 20 chance would bring it about right. But after one party where 90 per cent of the members were moved to take potato salad, the committee planned just how much of each article on the menu was needed and assigned it accordingly. If a member finds at the last minute that she is unable to attend, it is understood that she will furnish what she agreed to, unless she gives the committee 24 hours' notice.

In addition to the food each member packs in her basket plates, cups, silverware, sherbet glasses or dessert plates, and napkins for herself and husband. The hostess furnishes hot coffee, cream, and sugar and provides tables, lunch cloths, and chairs for the crowd, which is usually about 36 out of a possible 40 each time. Each member, as she arrives with her husband, unpacks her basket, arranges the food she has brought in the kitchen, and places her dishes and silverware on one of the tables. Usually two or three members assist the hostess in serving, and after the meal is over each member gathers her soiled dishes and nap-

kins and repacks them in her basket to be taken home and washed. By this means most of the dishwashing in the home of the hostess is eliminated, and the few extra dishes in the various homes can be washed along with the breakfast dishes the next morning. Thus there is no dreaded "day after" for the hostess. Also carrying our own dishes, napkins, and silver obviates the necessity of borrowing on the part of the hostess, for few housekeepers own enough equipment to serve 30 or 40 people.

It is understood that any leftovers will be taken home in the basket of the one who furnished the dish.

Before we adopted the six-sandwich plan it was difficult for the one who furnished the sandwiches to prepare just enough. Now we always have enough and seldom any amount left over.

Some of us who are members of large families have adopted a modified form of this plan for our holiday gatherings, thus making it possible for the hostess to enjoy a holiday instead of regarding it as the hardest day of the year. Also it is very pleasant for two friendly families, with children of approximately the same ages, occasionally to combine a meal. Working together varies the monotony for the two mothers, and it is always a festive occasion for the children, even if the food is nothing out of the ordinary.

BELOW I am suggesting several menus for picnic suppers, followed by a few choice recipes. Scalloped dishes are always popular for such occasions, as they are easy to serve and may be kept hot on the way by covering them and wrapping closely in several thicknesses of newspaper before putting in the basket. The scalloped chicken is especially good for a cold night, and while it may not be quite so good as a choice piece of fried chicken a generous helping of scalloped chicken is infinitely preferable to fried neck or wing. The chicken and potato scallop is also a good way to serve chicken for a crowd. A moderate-sized chicken scalloped either way will serve 10 people generously.

The so-called Italian Chop Suey, while unlike the Chinese dish of that name, is generally liked. The recipe given will serve 12 people. To be at its best round steak should be purchased for it and ground at home, as Hamburg steak in the average market is about as well flavored as sawdust.

I am giving my two favorite sherbet recipes. The orange sherbet, being made with milk, is richer and more like ice cream, especially if a little cream is added. The raspberry sherbet is very attractive in both color and flavor, especially if made with red raspberries.

PICNIC SUPPER MENUS.

Scalloped chicken
Scalloped potatoes
Cold slaw
Sandwiches

Jelly
Olives, Pickles
Cake
Raspberry sherbet
Coffee

Baked ham with Chili sauce
Creamed potatoes in casserole
Buttered peas (canned)
Sandwiches
Mixed fruit salad
Olives
Pumpkin pie
Cheese

Chicken and potato scallop
Scalloped corn
Waldorf salad (nuts, celery, and apples)
Sandwiches
Pickles
Cake
Orange sherbet

SCALLOPED CHICKEN.

| | |
|-----------------|---------------|
| Chicken or fowl | Chicken gravy |
| Toast | Pepper |
| Bread crumbs | Salt |

Stew the chicken until tender in enough water to cover, remove from the broth, and thicken the latter with flour stirred smooth with water. The gravy should be rather thin. Remove the meat from the bones and cut in small pieces. Oil a glass or earthenware baker, put in a layer of toast broken small, then a layer of chicken, and repeat until all the chicken is used, sprinkling the top with crumbs dotted with drippings or butter substitute. Pour enough chicken gravy over to moisten all the toast and bake about 40 minutes, or until well heated thru. Cooked veal or even pork may be used along with the chicken. Season to taste.

CHICKEN AND POTATO SCALLOP

| | |
|-----------------|-----------------|
| Chicken or fowl | Chicken gravy |
| Boiled potatoes | Minced onion |
| Bread crumbs | Salt and pepper |

Prepare the chicken as in the preceding recipe. Boil the potatoes with the skins on, peeling and dicing when done. In an oiled baker put a layer of the diced potatoes, sprinkle lightly with salt and a very little pepper, add a little minced onion and then a layer of chicken. Repeat until all the chicken has been used, cover with crumbs, dot with drippings or butter substitute, and pour over thin chicken gravy to moisten. Bake about 40 minutes. Almost any other left-over meat may be used in this way, and the onion may be omitted, if not liked.

ITALIAN CHOP SUEY.

| | |
|--------------------|-----------------------|
| 1 pkg. spaghetti | 3 tablespoons fat |
| 1 lb. chopped beef | 1 tablespoon sugar or |
| 1 qt. can tomatoes | honey |
| 1 large onion | Pepper and salt |

Cook the spaghetti in salted boiling water until tender, drain and add the tomatoes, seasoned with salt, pepper, and sugar. Cut the onion small and fry in the fat until light brown, add the chopped beef and fry until done, stirring to keep from burning. When done thru mix with the tomato and spaghetti, add more seasoning, if necessary,

(Continued on page 52.)

ANOTHER year! Right here, for us to take into our lives and use for our own best purposes. Another new wonderful year! Another sheet of paper to be written on. Another high adventure to start. Another port to sail from. Another hill to climb. Another trail to be followed, unblazed, no footprints on it. Call it what you will, make your own figure for it; it is here. It is here, whether we are glad or sorry, here to be met and lived and shaped into something as like our dream of a year as our hearts and our wills can shape it. Oh, let us make it into a thing of beauty and of power!

Everybody, you know, assumes that New Year's resolutions are entirely out of fashion. It is quite the proper thing to smile at the mere words, as at something utterly crude or futile or old-fashioned. It is very up-to-the-minute to scorn all the simple old ways of trying to better our own habits or manners or speech, or the way we order our lives. Yet often there is a strangely inspiring power in the very thought of a new start; and we would do well, perhaps, to cling to the fine old custom of taking advantage of all the beginning-times of life. Indeed, I often feel that one of the best of all resolutions is the resolve to notice and claim and take full advantage of all these beginning-times of life—every dawning morning, as it brings its new, unguessed day; every new and vivid week, breaking like a blossom out of its Sunday; every fresh brave month; every great, wide, wonderful door to a New Year. On all these beginning-days, how wise that we tighten our girded armor and sharpen our spiritual weapons, to go out with new zeal against our old enemies the giants and the dragons and the little foxes that spoil the grapes, our ripening grapes of purpose and character. For after all, there isn't anything else worth while, if these things aren't done right.

Everybody has one pet sin—one especial weakness. Letting things come between me and what I mean to do—is mine. (Probably the Editor could have guessed it! But there are so many lovely things to come between.) Is confession good for the soul? Then let me bare this day of mine, accepting the reproaches of the successfully efficient, while I vow my new vows and prepare for my clean, fresh start.

You see, to be very good, I should have mailed this Sideline department yesterday. I did not. So this morning I cleared the decks early, uncovered my typewriter, and just then, behold, two babies came floating across the path of duty—one wee and soft, in protecting blankets, the other rosy-cheeked and romping and imperious. Of course I played with them (such a happy hour!) un-

Beekkeeping as a Side Line

Grace Allen

Press. It required about three minutes, but you know pages have a way of turning in my fingers, and I couldn't lay it down. However, as it is really nearly as dry as dust, it didn't hold me long—probably not more than an hour. Then followed a little spree with Webster and a longer—much longer—one with a borrowed volume of "Atlantic Narratives." Then a truant thought suddenly landed squarely inside an old Plato, long unopened, and there—the hours just passed over. And at the last I fairly shut my eyes, so as not to seem to notice how Plato, as he slipped back into his accustomed place, bowed, as it were, to Gilbert White on the right and Samuel Johnson on the left. I shut my itching fingers tight and pulled them away quickly, going promptly back to my desk. "But the day is practically gone," I admitted sadly to the neglected typewriter, "and no Sideline yet. Yet at that," with the customary self-defense of the guilty, "the things I have taken from it were something more than herbs and appies." Herbs and apples! What was the rest of that? That ought to go into a January Sideline—it surely ought—for all sideliners to recall, when tempted to take from the fair days to come any gifts less beautiful than the best. So I picked up my Emerson and looked for "Days." One glance down the Table of Contents showed that it was not in this volume. That should have sufficed. But the little foxes were in a most naughtily nibbling mood, and one inspired page after another held their reader till the shadows fell. Later, after the lights were on and the house was very still it flashed over me that "Days" was a poem instead of an essay, and this fragment was quickly located:

"I * * * *

Forgot my morning wishes, hastily
Took a few herbs and apples, and the Day
Turned and departed silent. I, too late,
Under her solemn fillet saw the scorn."

Oh, if there be any other procrastinating sideliner on the reading list of Gleanings, any other who forgets his morning wishes as the hooded, hypocrite Days pass by—looking so ordinary and simple when they are really so splendid and divine—do join me in the vow to take hereafter not herbs and apples merely, no, nor even food and drink for the spirit when the spirit has chosen to work and serve rather than to feast; so that when our Days depart, silent, we may see under the solemn fillets something other than scorn.

Surely we need not be ashamed to make one or two such honest, earnest New Year's

til their mothers carried them a way. Then there was something I wanted to look up in "The Manual of Style," issued by the University of Chicago

resolutions. Perhaps we well may be ashamed if we fail to do so; for so we fail to claim the inspiration, the quickening power and the renewed and strengthening purpose that come with the New Year. For I care not a whit what those more worldly-wise may say; I know right well that all the mornings and all the first days or months and all the wonderful New Year's Days are the doors that God opens when He smiles and says, "Try again, child."

Then isn't there some little way in which, as beekeepers also, we can strike a higher mark in 1920 than we have ever struck before? Anyhow, let's aim at one; more thoro studying, instead of just superficial reading; careful weighing of things, instead of being swayed too easily by others; keener and more accurate observations; better methods, if we can find them; better and more faithful application of them, when discovered; prompt performance instead of procrastination. Let me repeat that. **Prompt performance instead of procrastination.** And so on, down the whole list of individual sins of omission and commission.

* * *

Prevented by illness during October of 1918 from examining our bees until early November, we found them heavy with stores and still, even so late, showing bits of brood in most hives. Again in 1919 we failed to get to the fall examination in October, partly because that month, usually a golden month of sunshine and dreams, had only six clear days to its credit, and most of the cloudy ones raining. Aster in full bloom, too. In early November, the little town yard, with its surrounding bitterweed bloom of late summer and early fall, had its few hives heavy and ready for winter. But out in the country, many were tragically light. We fed a little, equalized stores somewhat, united several, and, with careful watching, hope to get thru.

There was practically no brood anywhere. The one happy exception was that Ben Davis Golden queen we bought in October. She had brood in several combs.

* * *

Sometimes I wish people who are not beekeepers wouldn't ask me about my bees every time they see me. "Well, how're the bees?" begins to irk, when it becomes the almost stereotyped greeting of people who aren't the least bit interested in bees themselves. Do they ask doctors, I wonder, how the sick are, and preachers how the sinners are, and plumbers how the pipes are? Perhaps, tho, I have brought it on myself, by an over-enthusiasm at certain times, exploding bee-talk when the laws of polite society called for chit-chat about the high cost of living or the best, or worst, movie in town. After all, I'd as soon my friends would ask, "Well, how're the bees?" as "Well, what do you think of Theda's latest?" (Would you believe I have never seen her at all?

Why bother to see things, when you don't like what the advertisers write to get you there?)

* * *

What is a "filter cloth," Mr. Weybright (page 733)? I'd have thought they were cloths that some liquid filtered thru, but since you speak of them as "practically rain-proof," they're evidently not that.

* * *

Answering an inquiry; the lines in this department in October (from which the quotation marks got lost), beginning "All these put their trust in their hands," and closing "And in the handiwork of their craft is their prayer," are in the 38th chapter of Ecclesiasticus.

* * *

It seems to me recently more producers have been troubled with fermentation than usual, or else there has just been more comment on it. When extracted honey ferments, it is supposed to be because it was taken off before being thoroly ripened. But when one man is very particular about extracting only combs that are sealed two-thirds or more, like one I know; and another takes it all, sealed and unsealed indifferently, but heats it all before putting it in cans or bottles, like another I know; and the first man finds his honey, when a year old, fermenting and granulating at the same time; while the second man's neither ferments nor granulates—well, it leaves the first man saying, "Evidently I must heat all my honey. Or else I must extract only combs sealed straight to the bottom-bar. Which?" While still another man I know answers, "Neither. When the weather is warm and dry, take it all off, sealed and unsealed both (taking care to leave five or six combs, sealed solid, to each hive), and let it stand for a few days in a tank in the sun. You'll never have any trouble with fermentation." Then comes still another, saying, with a serious shake of the head, "Don't take any honey till it is sealed solid."

Taking only what is sealed solid is simplest, perhaps, as it does away with the ripening tank and the heating. Either of the other methods cleans up all the unsealed honey in the supers, and some seasons there is considerable.

* * *

THE NEW YEAR.

God set me in a shining field;

My heart began to sing,

"Now I shall plow and plant, and reap,

In time, some lovely thing!"

The days came bearing hours for tools:

I lost them, one by one.

Then suddenly last night I cried

For what I had not done.

Now lo, a gate—a fresh new field—

And oh, I think God smiled,

Because I heard, so fatherly,

"Try again, my child!"



FROM NORTH, EAST, WEST AND SOUTH



In Southern California.—The weather conditions have been very changeable here the past month. We have had several good rains in the valleys with snow in the mountains. The wind blowing across this snow caused quite cool weather for some weeks. Frost in some parts damaged the tender vegetables and flowers. It is raining today (Dec. 5), and about one inch of rain has fallen during the past 36 hours. The alfalfa has started to grow in some places. In favorable seasons this plant will furnish considerable nectar for the colonies to build up on. With mild weather the sages should show some new growth by the first of February. Some beekeepers have complained of the sheep men burning large areas, thereby destroying good sage ranges but making the grass grow better for sheep pasturage.

My sister, Elizabeth Andrews, has lately returned from France where she did Red Cross work as a member of the Stanford University Unit. When she enlisted for work overseas, she expected to do reconstruction work along the lines of architecture and beekeeping. The need for Red Cross workers was so urgent that upon the arrival of the unit in Paris, the entire time (over a year) was spent in "searcher" and embarkation work among the soldier boys. After seeing the way they live over there, she thinks that it would be a joke for an American to plan a house for a Frenchman. As for beekeeping, she did not see many bees, but those she did see were near Nice, in cement hives with tile roofs. She did not see the inside of any of these hives, but thought if any people in this day and age were content with those conditions why disturb them in their brief hour of happiness. Many an American is sadder and wiser after a trip over there and very well satisfied with things at home, thank you.

Bees are arriving as thick as tourists in southern California. Arrivals are as follows: At Riverside, one carload of bees, containing 805 colonies, from Idaho; one carload of bees, containing 810 colonies, from Utah; one carload of bees, containing 450 colonies, from Idaho; at Ontario—one carload of bees from Utah. This sounds like a market report, doesn't it? And this is only the beginning, as many more carloads are to follow. These bees are brought here for the winter, in order to get the benefit of our orange honey flow and to make what increase they can. Then they are returned to the North for the summer flow. The climatic conditions, combined with the early flow here (April and May) and the later flow in the Northern States (June, July, and August), make this system possible.

For those beekeepers desiring feed, some relief has been found. The beekeepers of Riverside and San Bernardino Counties

are getting 50 sacks of sugar per week. While this will relieve the situation somewhat and will help to save many colonies, there is no doubt that if the beekeepers could have secured the needed sugar during October and November, many more bees would have been saved.

A little honey is coming in from a few favored localities in southern California, but the effect this will have upon the colonies is yet to be seen. In places some of the orange groves have been short of water during the summer. In the fall they were given a good irrigation, followed a week or so later by a good soaking from the heavens. These abnormal conditions seemed to bring on quite a quantity of out-of-season bloom, as it is called. One or two varieties of eucalyptus are also furnishing some bloom and nectar.

To say that the Short Course, given in Riverside Dec. 1-6, has been a success would be putting it mildly. Much enthusiasm was manifested from the beginning and the attendance was good during the whole course. From 100 to 150 was probably an average attendance. To have a week's course and have the privilege of hearing such men as Dr. Phillips, Demuth, and Sturtevant is certainly an inspiration. And Bixby—why we all like Bixby—and his talks were fine, just good California home-grown stuff. Mrs. Richardson, the woman beekeeper, gave us some good points. But when she speaks of using tobacco cans filled with cement to keep the hive covers from blowing off—well, all I can say is, I'll have to take off my hat to the fellow who uses enough tobacco to furnish cans for one of our 700-colony apiaries out here in California.

January is a good time to take stock, as it were. With the beekeepers of southern California it has been a very irregular season—perhaps unsatisfactory to the great majority and wholly satisfactory to very few. The year started with more new beekeepers, with more people wanting to invest in bees for the first time or to learn the business than ever before. This was due to the high prices received during the year 1918, together with the idea still held by so many people that it is easy money, because the bees do all of the work, leaving little for the beekeeper to do but to look in the hives occasionally, sell the crop of honey, and get the money. The season started with what the old-timers call a short rainfall. Perhaps normal weather prevailed during the year; at least no unusual climatic conditions existed, that I remember. Many apiaries were moved to the oranges, which yielded a usual crop and saved the day for many of us. With this one exception, I think the yield from all of our many varieties of honey flora was a disappointment and in many cases a failure. Almost all of the sages yielded no surplus. The black



FROM NORTH, EAST, WEST AND SOUTH



sage in a few localities filled the hives, leaving them with plenty of stores but nothing for extracting. The white sage was about the same but in some places yielded nothing at all. The purple sage, which perhaps yields most of all in tonnage in a good season, was a very inactive yielder this year. The wild buckwheat, which so many of the beekeepers of San Bernardino, Riverside, and San Diego Counties depend upon for most of their surplus honey, "went back on us this year," as the saying goes. Then the lima beans—the old Ventura County stand-by—for some reason failed to give nectar. This variety has for years been extensively raised near the coast of Santa Barbara and Ventura Counties without irrigation. Only once before, if I am rightly informed, did it fail to yield, and that was caused by a very hot wind which literally cooked the blossoms. These beans have yielded as much as 150 pounds per colony in a banner year. Another variety of beans—called Henderson's Bush Lima—has been very extensively planted the last few years. This variety is usually grown a little farther away from the ocean and is irrigated. The San Fernando Valley, a practically new section where thousands of acres of these beans were planted, was the haven of the migratory beekeeper this year. Nectar was yielded in abundance, and, while the bees on the old variety of bean were starving, those near the irrigated bush-lima fields were rolling in honey. Some beekeepers extracted, but most of them were quite satisfied to get the hives well filled for winter.

The price of colonies in southern California remains steady altho the demand is not nearly so great as was the case last winter. Very few apiaries are offered for sale. Supplies are very high as compared with the price a few years ago. Experienced help is hard to get, but there are many applications from both men and women who wish to learn the business. At our gatherings, one notices a constantly increasing proportion of young, enthusiastic men and women. A few of the real old-timers are still in evidence. New blood, literature on apiculture, short courses, and, last but not least, organization, will surely make 1920 a banner year.

A Happy New Year with much prosperity to all. L. L. Andrews.

Corona, Calif.

* * *

In Northern California.—Again have we been favored by beekeeping short courses this winter. The Division of Extension in Agriculture, University of California, in co-operation with the Extension Service of the U. S. Department of Agriculture opened their first course during the third week of November at Davis. The second course was held at Fresno the week following. Dr. E. F. Phil-

lips, George S. Demuth, and A. P. Sturtevant represented the Government. In general, Dr. Phillips spoke on the behavior of bees under seasonal conditions, Mr. Demuth would follow with beekeeping practices under like conditions, and Mr. Sturtevant would give an exhaustive account of bee diseases. The information imparted by the three men was of inestimable value to all commercial producers. There is no gainsaying the fact that many experienced and large beekeepers understood for the first time the fundamentals of the various methods which they were using, and, moreover, have now a clearer conception why some of their methods were not altogether satisfactory, and why others were quite successful. The local speakers were J. D. Bixby, C. B. Justice, Mrs. F. Richardson, and G. A. Coleman. Mr. Bixby dwelt upon various phases of practical work, which always aroused keen interest among his hearers; and Mr. Justice gave an account of the success of the California Honey Producers' Co-operative Exchange during the past year.

The attendance at the two courses was not nearly as large as it should have been. This was due entirely to the apparent lack of interest manifested by the University of California in the conducting of the courses. There are many beekeepers that received no notification at all regarding the courses, and others that received announcements only three days before the Davis meeting, which made it quite impossible for some to arrange their affairs in time to attend the entire course. It is indeed regrettable to have to make mention of this matter, and it is done only because the writer has been approached often by very many beekeepers who wished to know why the University practically continues to ignore the beekeeping industry in the State. Your correspondent must confess that he can give no definite answer. It is known that other State universities have responded and responded well to the requests made by the beekeepers, and that our memorandum, signed by over 130 beekeepers in attendance at the short course, held at Davis a year ago, and requesting University aid, has been unproductive of results. We have all been deeply grateful for the teachings given us by the men who are sent out by the Government, and, if we are to receive future help in this direction, we must have at least the active co-operation of the Division of Extension of the University of California.

Modesto, Calif. M. C. Richter.

* * *

In Texas.—Every effort is being put forth to make the short course at San Antonio the best of the series that Dr. Phillips and his associates have conducted. W. B. Lanham, assistant director of the A. & M. Extension Service, has mailed almost 4,000 invitations. S. C. Hoyle,



FROM NORTH, EAST, WEST AND SOUTH



publicity agent of the same department, has placed notices of this meeting and feature stories relative to it in the hands of 250 editors in the State. H. J. Reinhard, acting State entomologist, has sent information to the apary inspectors of the State urging them to use their influence to see that many attend this school.

Mathis, San Patricio County, has long been the home of noted beekeepers. Several years ago Mathis was mentioned with Uvalde as a center of the bee industry. By death of some of the veterans and by discouragement due to drouth this town had somewhat lost its standing, but you can't keep a good bee location hidden. This was a good year and next will be better. A county beekeepers' association with H. A. McCauley as president and G. W. Coltrain as secretary was recently organized. Both men are of the right sort and Mathis is again on the bee map.

Most fruit trees have lengthy blooming periods and have more than one blooming season to the year. The blooming period of the apple is so prolonged that it is hard to control the codling moth by spraying. A single tree will often continue blooming during a period of 30 days. The blooming of the peach is greatly prolonged, as the same orchard may be in bloom for six weeks. Again in the fall of the year these same trees bloom but not as heavily as in the spring. Bees were collecting nectar and pollen from plum and peach Nov. 12-20. It is this prolongation of blooming season that makes the fruit bloom of such importance to the bee-men of Texas. In order of production of honey, fruit blooms collectively rank seventh.

One of the peculiar problems arising from the late Corpus Christi storm is the disposition of the hives, bee fixtures, comb, and even bees left in the drift by the receding flood waters. Some few apiaries in the storm-swept region were known to be contaminated with foul brood. Few of the beekeepers had names or brands on their fixtures. Now these hives, clean and foul, are mixed and scattered over a hundred miles of river valley and no one knows from where they came. So great was the number of such fixtures deposited in one county, that the State Entomologist, on the request of the beekeepers, placed a quarantine on all such articles, and advised the interested parties to hunt out and burn all worthless fixtures and comb found in drifts.

Notwithstanding the fact that a heavy frost occurred Nov. 12, the bees are still gathering small amounts of stores. There was new honey on three or four frames to the colony Nov. 20. Most of this nectar came from *Aster lateriflorus*. A few other asters are still in bloom, but none of them can in any way equal the above, as it has been in bloom and heavily worked by the

bees for six weeks. From a few places come reports and rumors of bees without winter stores. In those sections which were storm-swept, the keeper is in no way to blame, but in a few locations where the beekeepers took off the honey too closely and sold at a very low price, the keeper alone is to blame. We know of one man's buying back his own honey at twice the selling price. Beekeepers must realize that they cannot take all the honey from a hive at any time and that a supply of honey on hand for feeding is the best insurance one can have for another year's crop.

It is the belief of the best-informed beekeepers that there will be but few bees in Texas which will have to be fed sugar. In order that no beekeeper really needing sugar for feeding purposes should go without it, the manager of the Texas Honey Producers' Association induced the Imperial Sugar Co. to send a car of raw sugar to San Antonio for the use of beekeepers. It is hard to say just what the result of feeding this grade of sugar will be. Some beekeepers who have used brown sugar report good results, but on the whole it is recommended only as an emergency measure. If you have to feed and can get uninfected honey do not hesitate because of the price. Save your bees.

There is yet in the hands of the producers, the Texas Honey Producers' Association, and dealers much honey of known origin. If you are buying honey to feed, make your wants known and you can obtain honey from apiaries which are free from disease. This fact is guaranteed by the certificate of the county apary inspector, which will accompany the shipment if you ask for it. Let it be remembered that if you have ever had foul brood in your apiary, there is liable to be an outbreak next spring whether you feed honey or sugar. It is common experience that after a period when the bees are on starvation rations, foul brood will again put in its appearance, even tho it has not been seen for several years. It is thought that this is caused by bees cleaning up the old honey which exists in the few isolated cells always present in the brood-combs.

College Station, Tex. H. B. Parks.

In Iowa.—The Eighth Convention of the Iowa Beekeepers' Association will be considered as one of the most successful meetings in the history of the organization. All of the sessions were well attended and were thoroly enjoyed by every one present. The papers presented were of a very high character and are worthy of a wide distribution among the beekeepers of the State. The honey and biscuit banquet was the distinctive feature of the convention. The association had as its guests at this banquet some of the foremost people of Iowa, and all of them will be grateful to the honeybee for some time to come. The



FROM NORTH, EAST, WEST AND SOUTH



papers of this program will appear in the proceedings, which are expected to be ready for distribution early next year in the report of the State apiarist. Several new names were added to the list of membership of the association at this meeting. By vote of the meeting the action taken two years ago to raise the dues was put in force. Therefore the dues of the association for 1920 are one dollar and are payable at any time to the secretary-treasurer, the State apiarist, at Ames.

A very important step was taken by the meeting when it voted to seek affiliation with the State Horticultural Society. Such a co-operation will certainly result in benefit to both organizations. Another matter of much interest to all beekeepers was the appointment of a committee to co-operate with the State apiarist to determine the fair price for honey. This will be arrived at from the prevailing prices in the several sections of the State. This price will then be given wide distribution among the beekeepers. It is expected that the price will change from month to month but by co-operation the information can be secured. It is not expected that this work will in any way tend to fix the price on honey, for such is not the aim. Today a little honey is selling for 15 cents, more is selling for 30 cents, and considerable is selling for 25 cents. It would be a very great improvement for all concerned if a more uniform price could be maintained for this staple article of food.

In trying to arrive at a fair price for honey, how many know what it costs to produce a pound of extracted honey or a section? Beekeepers invest their money in bees, equipment, and supplies; they put in a certain amount of time to produce their crop. Are they getting fair returns of their investment? The time may not be so far distant when these questions must be answered.

At the Des Moines convention many of those present signified their desire to see a county beekeepers' association organized in their home county. There is now available a letter of suggestions for those interested in this important work. The State apiarist will be glad to send this letter and suggested constitutions to all who will write for them. Personal assistance will be given wherever possible. In every county where there are five or ten beekeepers interested in mutual welfare there should be an organization. A few counties have already realized the advantages of an association and have perfected an organization. These counties are now in a position to do much more effective work in any phase of the problems of the industry. An association is the final step in the "get together;" it is proof that your industry commands your respect. A few of the advantages of local associations are:

larger quantities of supplies can be ordered, and the association discount is available; concerted action can be taken on bee-disease control; the honey market can be stabilized, and underselling, the suicide of marketing, can be largely eliminated; and large lots of honey can be prepared for the outside market. Organization is the foundation of industry, and beekeeping is an industry. The value of county associations is appreciated by the county agricultural agents, as in their last meeting this resolution was passed: "That county beekeepers' associations be promoted by the county agents where conditions justify, with the idea that a stronger State organization be formed thru which beekeepers may at a later date do collective buying."

The extension beekeepers' short course will be held at Ames during the week of Feb. 9, 1920. This course is designed primarily for those who have had some experience with bees. The Bureau of Entomology of the United States Department of Agriculture is co-operating in the conducting of this short course. The work given will be of great value to anyone who expects to continue to keep bees. With the importance of the industry in this State, there is every reason to expect that more beekeepers will be in attendance than in any other State. Details and a program may be secured upon application to the State apiarist.

During the coming year the Extension Department of the Iowa State College will organize boys' and girls' bee clubs. This work will only be undertaken during the first year in five counties. There is already much interest manifested in this line of work and the calls for the work will exceed what can be done.

A new and revised Beginner's Correspondence Course in Beekeeping is to be offered by the Extension Department of the State College during the coming year. The work given in such a course has proved very beneficial during the past two years, and the advanced requests for this course indicate that it is needed by the people of the State.

Ames, Ia.

F. B. Paddock.

* * *

In North Carolina.—The fourth annual meeting of the North Carolina State Beekeepers' Association will be held at Greensboro, Jan. 8, and there is every indication that it will be the most largely attended and really profitable convention of beekeepers ever held in this State. The officers are Franklin Sherman, Jr., of Raleigh, State Entomologist, president, and James M. Gibbs of Reidsville, secretary-treasurer. The program for the approaching convention is being arranged with the assistance of C. L. Sams of the beekeeping co-operative service of the State and Federal agricultural departments, and will include a number of well-known author-



FROM NORTH, EAST, WEST AND SOUTH



ities on beekeeping from without the State as well as numbers of the leading North Carolina beekeepers.

The association was organized in Winston-Salem in January, 1917, when Dr. E. F. Phillips of Washington, D. C., and E. R. Root of Medina, Ohio, had prominent places on the program and greatly quickened interest in improved methods of beekeeping. The North Carolina beekeepers are hoping to see and hear these distinguished authorities on bee culture again this year, along with other apiculturists from without the State that the officers of the State association may induce to attend and take part in the program.

The membership is extending into every county and locality in the State, and the good results in better beekeeping are evident on every hand.

W. J. Martin.

Raleigh, N. C.

* * *

In Ontario.

The Ontario Convention was held, as per schedule, in Toronto on Nov. 11, 12, and 13. Owing to a smallpox scare in the city at that time, the attendance was not up to the usual standard. However, a good crowd was at every session, the last session being just as well attended as the first—and that speaks well for a three days' convention. As usual a lot of time was spent in discussing the disease situation, and it was apparent from the reports from all over the Province that foul brood was never a greater menace to the industry than at the present time, even if we know more about the disease than was formerly the case. Modern methods of transportation that so greatly facilitate the moving of bees from one place to another, are not without disadvantages, as there is no question but that disease is often carried from diseased sections to clean localities by bees being shipped in. It was generally felt by the members of the convention that the grant from the Government for inspection work was altogether too small to cope with present conditions, and a committee was named to wait upon the Minister of Agriculture and present reasons for a largely increased sum for that purpose. With the sum granted for the past few years, all the money would be spent in the first rounds of the inspectors and then they would be called off the road before the beekeepers who had disease in their yards could be visited again to see if instructions had been carried out. Foul-brood legislation is a difficult matter to consider and put into practice, so far as being just sure as to what methods to follow for best results; and I confess that the longer I consider the question the more perplexed I am in many cases as to what is the best thing to do or have done. One thing sure, present and past methods have not and are not giving the results that many of us fondly expected some

years ago. Facts are facts, and even if they are mighty unpleasant to swallow sometimes, there is no use playing the ostrich act and trying to imagine that all is well when such is not the case. As stated more than once in these columns, I have nothing personal in view and blame no one in particular; yet the fact remains that foul brood has been checked but little, taking the Province as a whole, during the time we have been fighting it in the way we thought best. Whether increased grants will make a big difference or not is a question, but it will at least give us a chance to put forth greater efforts anyway.

I was gratified in view of what was said in this department in the November issue, to find that our president in his annual address strongly advocated a queen-rearing apiary under the management of the Provincial Apiarist, queens of a strain of Italians strongly resistant to European foul brood to be raised and sold to Ontario beekeepers, especially to those living in districts where black brood around them made pure mating impossible. More than that, it was a pleasure to find Prof. Millen, the Provincial Apiarist, anxious to help advance the scheme by all means in his power. We confidently look forward to a start being made next spring in this work—a start be it understood, as Prof. Millen rightly pointed out that it would be some time before queens could be reared in sufficient numbers to care for all orders that would be sure to come in. Now if the Dominion Apiarist at Ottawa will just fall in line, real help will be given to many beekeepers of a nature that will surely be appreciated.

Sugar has again advanced and today is quoted in Toronto wholesale houses at \$12.21 for granulated. There seems to be a determined effort on the part of some dealers in honey to try to bear the market in this product, even if sugar and some other commodities are getting higher all the time. A few days ago I noticed where a reporter was getting loaded up on market conditions for honey, and I fully expected to see quotations in the daily press soon follow in line, as that is always part of the game in such cases. Sure enough, two days after this interview was published, the market quotations in the city press stated that dealers were paying from 21 to 22 cents for clover honey at "country points." Now I am not saying but that honey may have been bought for that, but being in the market for a limited quantity myself a short time ago, I certainly could not find any offered at that figure. More than that, a canvass of the wholesale houses on the "street" failed to find any dealers willing to sell any honey to me at a figure that would allow them anything less than a big profit if they bought at 21. Twenty-six cents was the lowest quotation given me; and five



FROM NORTH, EAST, WEST AND SOUTH



cents a pound profit in a wholesale way is more than dealers always make, if I have been credibly informed. There appears to be little honey left in Ontario altho there may be more than I have an idea of. The bulk of the surplus still on hand, no doubt, is in Quebec where the crop was above the average, I believe. But with sugar liable to go much higher, as wholesale grocers predict, maple syrup quoted at \$4.00 a gallon, and like advances in other products, cheaper honey does not look much like a possibility just at present—much as I dislike to confess, for I have earnestly hoped that not only honey but all other necessities of life would get much cheaper.

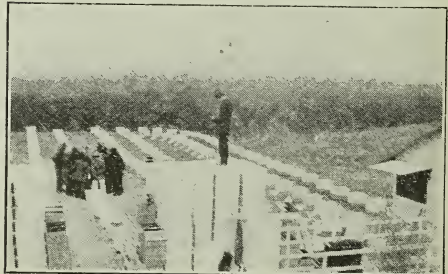
Speaking of high prices, I have just been looking over market quotations of clover seed, a subject that always seems to be in line with beekeeping to a certain extent, as we depend upon clover so much in our business. Today (Dec. 9) red clover is quoted at \$31.00, alsike at \$27.00, and sweet clover at \$14.00 to \$15.75. These high prices are in each case for No. 1 seed per bushel. Naturally with such high prices for seed, there is sure to be much clover seeded another spring.

Having need of some more cellar room for vegetables, etc., this summer we built a cellar at one place much on the line of the one illustrated and described by the folks at Medina. It is 10 by 24 inside measure, and 6 feet high, walls all under ground with reinforced cement top over all. At the southwest corner there is a hall leading out, four feet long and the same in width, with cement roof over it as with the cellar proper. There is a door at each end of hall and then there are steps leading up, with portico covered with roof. The cement top on the cellar has earth five feet deep in center, sloping to two feet at sides, and all sodded over. Having 60 colonies of bees, with no winter cases made to shelter them, we decided to put these bees in the cellar at one end, and so we partitioned off the east end of the cellar, leaving a space 10 by 12 for the 60 colonies. They have been in the cellar two weeks, and while it is too early to pass judgment on their wintering, I wouldn't be surprised before spring if we wish that we had them outside. Briefly I might say that the cellar is too damp as now ventilated, or shall I say **not ventilated**, as that may be the cause of drops of water hanging from the roof since the bees were put inside. But I started to write about the cellar because of my experience in getting reliable thermometers, and I have come to the conclusion that often unreliable instruments are used and different results are reported when perhaps all the difference is due to the thermometers. I first bought one from a druggist who was sure it was all right. Hanging among the bees two feet from the roof, it said "47" and I thought

everything was all serene. But I was not sure about the matter; so I bought another from a druggist in another town, which was supposed to be all right too; but imagine my feelings when I found it said "41" when hung right beside the other instrument. I took it back and exchanged it for another one, which had been used for some years and which my friend felt sure was reliable. When hung up beside my "47" original, the thermometer last brought home said "43." I determined to buy a tested instrument the first time I went to Toronto, but I happened to meet the principal of our high school, and he asked me to take up one of their laboratory thermometers which was tested; so I gladly availed myself of the offer and placed it in the cellar. It said "44." My friend of the high school said I might test them myself by placing the thermometers in a mixture of snow and water, for if correct they should register "32" the freezing point. I tested all three in that way and found the laboratory instrument to say "33;" the one that registered "43" in the cellar stopped right at "32" exactly; while the one that said "47" in the cellar was up to "36" in the snow and water mixture. So regretfully I had to concede that the cellar was too cold, and that the thermometer registering 43 is correct. I suppose there are not enough bees to overcome the normal temperature of the earth and so the air is too cool and damp. As I see no way to remedy the condition I guess we will just have to wait and see what will happen with the thermometer standing steadily at "43," never varying half a degree—no matter what the weather is like outside, be it zero or above the freezing point. Bees are nicely clustered but have quite a loud hum all the time, and in a few cases I have noticed small drops of moisture at entrance hanging from the inside of the hive. But the moral about thermometers is that they are apt to say almost any figure—at least the kind sold here in Ontario seem to be that way. A tested instrument is the only safe guide to go by.

Markham, Ont.

J. L. Byer.



Scene at a really big beekeeping plant in California.

HEADS OF GRAIN FROM DIFFERENT FIELDS

A Detachable Porch To Prevent the Loss of Bees in the Snow. This is a subject not always referred to in text-books on bee-keeping. It is, how-

ever, one of the troubles that beekeepers find very acute during some winters in this section of British Columbia. The writer received a communication the other day from a correspondent in Ontario in which he says: "In winter when a warm day occurs, my bees come out, fall in the snow, and die. I have seen the snow black with them." So the trouble evidently is not confined to this Province alone. Here the winter usually commences in earnest about the beginning of November, and the snow, as a rule, remains on the ground, several feet in depth, until about the end of March, a period of five months or more. During this time, generally in February, we nearly always experience a "chinook," a warm wind, and brilliant sunshine, which lasts a few days and raises the temperature during the day to almost summer heat. This has such an effect on the bees that they come out of the hives in thousands, drop on the snow, and a very large proportion become chilled and unable to reach the hive again. This means that the hives become terribly depleted of bees just at the commencement of the breeding season, when it is most important to the well-being of the colony that the life of every bee in the hive be prolonged to its fullest extent. The bees in single-walled hives, or others with but little protection, are generally the worst to suffer, as in this case the inside temperature is sooner affected than in double-walled hives, or hives standing in cases. The remedy usually recommended, of slanting a board in front of the entrance to darken it, by keeping out the sun's rays, or facing the hives to the north, we find of very little use under the conditions that prevail here. Some of the beekeepers have told me that they have nailed screen wire directly over the entrances, but this remedy is distinctly worse than the disease; for the bees, in their frantic efforts to get out, quickly raise the internal temperature of the hive so much higher that "sweating," with subsequent suffocation, ensues, and the colony is lost. An effective remedy, the writer believes, can be found by having a detachable porch, or annex, over the entrance of each hive, the front being covered with wire screen. This would need to be large enough for the bees to come out into and fly so that they would then have means of voiding their faeces. As the winter is now here, any beekeepers likely to be troubled in this direction might try the plan outlined and report the result of their experience next year.

Nelson, B. C.

W. J. Sheppard.

[Ten or twelve years ago we tried wire-cloth vestibules or porticos for colonies wintered outdoors. The results were disastrous,

since old diseased bees, instead of being lost outside, and thus ridding the colony of their presence, would attempt to get out, and in so doing stir up the entire colony, causing the cluster to consume great quantities of stores and finally resulting in dysentery. On suitable days these porticos were removed; but even this did not save the bees, and most of the colonies having porticos died by spring. Altho many similar devices for preventing bees from being lost in the snow were suggested and tried out by many beekeepers, we believe none proved very successful, and at the present time we know of no better plan than to shovel snow lightly over the entrances on unfavorable days when bees are likely to desire a flight.—Editor.]

The Wife Cares for the Bees.

Mr. Moore of Fort Atkinson, Wis., operates over 50 colonies for comb and extracted honey. Mrs. Moore manages the apiary very effectively while her husband is away collecting insurance in



The apiary that the wife manages when the husband is absent.

distant counties during the busy season. She also helps to assemble hives, frames, etc., which he makes during the winter with a small power outfit. Lawrence Bellman.

Evansville, Wis.

Beekeepers Exhibit Interesting Feature of Fair.

Realizing the fact that to keep the price of honey where it rightly belongs, so that the producer may secure a fair return for his labor and interest on the money invested for bees and equipment, we must increase the demand by increasing the consumption of honey, and that the place to start to advocate the more general use of honey is at home, the Chenango County Beekeepers' Society staged one of the most interesting features of the Chenango County Agricultural Fair at Norwich, N. Y., August 26-29, by a fine exhibit of apiary products and ap-

HEADS OF GRAIN FROM DIFFERENT FIELDS

pliances, under the direction of the society.

There was a large display of bees in observatory hives, comb and extracted honey, beeswax, cakes, cookies and doughnuts made with honey, berries and fruits preserved with honey, jams, jellies, and marmalades made with honey, and a good display of apianary appliances. Our hustling secretary was on the job each day with a committee to answer questions, talk honey, and hand out samples of honey. At different periods we would demonstrate how the combs were uncapped and the honey thrown from the combs with the extractor, the combs being displayed before and after extracting. At the same time we would explain the difference between comb and extracted honey, and also the difference between extracted and strained honey.

The samples of honey were handed out by placing small round crackers on a small platter and about a half teaspoonful of honey deposited on each cracker, which made a very suitable and delicious sample. It was very rarely that a drop of honey was lost from the cracker. As fast as the samples were handed out we uncapped and extracted a new supply. One of the committee was talking honey all the time, and we always had a good audience. During the four days of the fair we handed out about 150 pounds of honey as samples, and on one day about 2,000 of Dr. Miller's leaflets on "Food Value of Honey."

We did not go to the fair to sell honey, as this season's crop of honey in this county is nearly exhausted. We went to advertise honey, educate the public in the more general use of honey, create a demand, and establish a fair price for our product, and to improve our knowledge of beekeeping by exchanging ideas, so as to raise more and better honey by scientific management.

While this is a county fair it was surprising how many were present from other States, and how much interest was displayed in our exhibit and talks on honey and its uses. It was also surprising how few ever heard of extracted honey or knew how it was produced. We feel that we have given honey a boost and have done some good advertising, that will be of great benefit in helping the sale of honey in this locality.

Norwich, N. Y.

T. R. Gorden.

Propolis Makes Good Floor Paint.

Whether or not propolis has any commercial value (I have seen the statement made that it has not), I have found that it makes a very satisfactory stain and wax for floors. After being charged by a painter several dollars for putting a coat of stain and then a coat of prepared wax or varnish on my hall floor I decided to try propolis on two other floors. I had

for several years kept a box in my workroom into which I had put the scrapings from frames and sections until there was an accumulation of several pounds. So I put a lot of it into a large bottle and added denatured alcohol and some turpentine, letting it stand until the propolis was dissolved. I then painted the floors with it, using more alcohol to thin it to the desired consistency to spread properly. One coat gave as good color and surface as the two coats on the hall floor; and the only cost for the two rooms was about sixty cents for the alcohol, as I did the work myself. The propolis gives the floor a tough waxy surface that does not break nor show scratches as varnish would. As the painter claimed that the cost of the material he used represented the largest part of the charge for what he did on my hall floor, I am satisfied that propolis has a value whether it is commercial or not.

As the gum from the sweet-gum tree seems to be the principal ingredient of the propolis gathered by my bees, the odor from it is very agreeable. I decided, after the first trial, that it would be better, on account of the odor, to use only alcohol and omit the turpentine, as the latter has a very strong odor that requires some time to dissipate.

Since some of the scrapings had considerable wax, I decided to separate the wax from part of the propolis used, which I did by putting it into a pan on the stove with an inch or more of water in the pan. When all was melted, the wax was on top with the propolis underneath. Letting it stand until cold, the wax was taken off in a separate cake and the propolis was in a separate mass of hard gum. It was then pounded up and added to the first lot in the bottle. Whether I should have left the wax in or not I shall know from the test of use later on.

Sumter, S. C.

N. G. Osteen.

Bees in the Southland.

The present year I started with four colonies and increased to 13 by natural swarming. The 13 colonies produced 750 pounds of honey which sold



A Texas snowball.

HEADS OF GRAIN FROM DIFFERENT FIELDS

for 25 cents per pound. My best colony produced 150 pounds of comb. This colony was a prime swarm, hived April 22 in an eight-frame Langstroth hive.

I see much said about large hives, but I think that the eight-frame Langstroth hive



One of these colonies gave Holloway 150 pounds of comb honey.

is large enough for the South. I think more depends on the beekeeper than on the hive. Some people claim that bees are more liable to starve in the smaller hive, but any man that will neglect his bees and let them starve is a poor beekeeper.

The Southland beekeeper can well afford to give his bees winter protection. When the temperature ranges from 40 degrees above to 10 below zero I think it is time to give an overcoat, and this would save honey as well as bees. A picture I am sending shows some Texas snow.

I have had people tell me bees would do as well in box hives as frame hives, but I



Holloway says: "Cotton is our best honey plant in this part of Texas. There are thousands of acres growing here every year."

have never seen 150 pounds of honey from a box hive. We need a national law to force people to keep bees in frame hives; then and not until then shall we be able to control brood diseases. Eugene Holloway.

Sanger, Texas.

Correcting Errors Indirectly Helps Beekeepers.

D. D. Cavanaugh, in the July Poultry Success, says that instead of using a butter tub

as a hive for bees, one may easily make a square box with roosts; and he proceeds to describe such a hive in detail ending with this remark:

"I like bees but do not fancy the factory-made hives that have to be fiddled with several times a season and the bees are continually swarming."

To this article J. H. McWethy replied in a letter addressed to Mr. Cavanaugh. It is as follows:

First, I wish to state that I have always believed in D. D. Cavanaugh, on poultry, but I wish to take exception to your article in July *Poultry Success* entitled "Bees Did Not Swarm."

The idea of every journal specializing in any particular line is to better the conditions for that line; you evidently have given very little, if any, study and consideration to the honeybees, or for what the modern beekeeper has been striving for the last 50 years. If what you state in your article is true, then such men as Quinby, Langstroth, Dadant, and last but not least, my dear friend, A. I. Root, would have lived in vain.

I sincerely hope that you will be fair-minded enough to endeavor to counteract any harm that article may do, for many poultrymen may try just the thing you recommend; and, if they do, they are not only doomed to failure, but they will do irreparable harm to other beekeepers.

You are evidently unaware of the following facts: (1st) Your bees will soon become black hybrids; non-resistant to disease; disagreeable to have around; and stinging persons, cattle, and horses.

(2nd) Not having hives with movable frames, you have no way of combating that dreaded disease "foul brood," of which there are two species, European and American; both bad, but the latter deadly.

(3rd) You have no way of controlling your swarms, which, no matter how you arrange the hive, will throw off swarms in May and June, unless properly attended to and the queens clipped. You may think they won't swarm, but don't fool yourself, D. D.; they will throw a swarm every year, even if you do turn all the butter tubs in creation on top for them to fill with honey.

(4th) I beg of you to consider your neighbor beekeeper, who is trying to raise good, prolific bees and queens. Your black drones mate with his sure-bred queens, and all his work is for naught; his bees carry foul brood from your apiary to his clean colonies, and presto, he is wiped out.

Dear friend, please stop and consider: Suppose that A. I. Root would put an article in *Gleanings in Bee Culture*, stating that the modern-built poultry house, recommended by D. D. Cavanaugh, was too much trouble, and that a few cracker barrels were good enough. What would you think?

I am also a poultry fancier, breeding pure-bred poultry, and am a member of the National Columbian Wyandotte Club, and I strive to have the best equipment and it *pays*. I am also a beekeeper—I hope, a progressive one, and I use nothing but the best equipment, and it *pays*, in time, pleasure, and dollars and cents. I have a yard equipped with good modern hives, which pay \$10.00 to \$15.00 per colony, no matter what the year.

If you are interested in beekeeping and desire

HEADS OF GRAIN FROM DIFFERENT FIELDS

any information, that I can give, I will gladly render you, or any prospective beekeeper, any assistance in my power.
J. H. McWETHY.
Cleveland, O.

[A number of farm papers have been publishing articles on beekeeping that contain what to the beekeeper seems remarkably poor advice. We believe it quite worth the readers' time to correct such impressions by writing directly to the author of the article as Mr. McWethy did; or better still, remonstrate with the publishers.—Editor.]

Bee-veils for Beekeeperettes.

Grace Allen need never say again, "I always knew a bee-veil was unbecoming." Mr. Mendelson's farmerettes have evolved bee-hats and veils that are really becoming. Now I know that Gleaning's Editor himself has "covered" Mr. Mendelson's apiary and the farmerettes; but being a mere man, he couldn't be expected to discover all the reasons why those farmerettes were so charming. For the benefit of other beekeeperettes (why

not call them that?) let me state that the pleasing effects produced by these bee-hats and veils were due to wise choices in the matter of color and material. The designs were not new. For instance, one outfit began with a 15-cent straw hat, very light and open in construction. This was covered with a piece of china silk with splashes of green all over it. The owner told me that the silk was a "relic of the past," stitched on with the sewing machine. It covered the crown and went over and under the brim, and served to keep out the bees and add protection from the sun. The veil was made of pretty figured green silk and green silk net. Underneath could be seen quantities of curly, golden hair. Now, doesn't that sound fetching? Another model was made on the same kind of a hat, but the trimmings (they really amounted to that) were of navy blue silk net and navy blue china silk with white polka dots. From underneath this creation, peeped black eyes and black hair. You see the variations can be endless. A hint to the wise is sufficient.

Let the farmerette costume and the be-



BACK LOT BUZZER

Ma says that's a great suggestion of Professor Baldwin's, where you introduce a new queen by drowning her in a cup of honey, but who'll be the life-saver that knows how to operate a pulmotor?

HEADS OF GRAIN FROM DIFFERENT FIELDS

coming bee-hat do for the beekeeperette what her crisp, starchy uniform has done for the trained nurse.

Ventura, Calif.

Flora McIntyre.

Clipping on the Comb Not so Awful.

In clipping queens on the comb, authorities say that practice is everything. I can not say that. When I purchased my first hive of bees, a book came with them—the A B C and X Y Z of Bee Culture. The first thing I saw when looking it over was a picture of a man making a dive at a queen with a pair of shears while she was on the comb. The thought of all that might happen to the bees as well as the queen made my blood run cold, and I never could think of doing anything like that. But when spring came, and the bees were at work full blast, I found that something must be done. So I opened up the hive and took out the second frame. There on the comb was the queen. She was walking about with her head down and her wings pointing upward as much as to say, "Why don't you clip me?" I held my hand near her just to see how she would like it, and to see what sort of shears I would need for the business. I pictured in my mind's eye a long and slender pair of scissors. Then the thought struck me, "Why not get a pair and do it

now?" I soon had the queen clipped, taking off a bit at a time, even trimming up both wings on each side till I had them looking just right. The following spring I had six queens to clip, and I was even more artistic, for I thought they seemed to enjoy it. The third year gave me 28; and when I was thru with this bunch I felt as if I was quite a hand in "dolling" up queens in short dresses.

Reading, Mass.

Frank M. Clark.

An Old-time Patent Hive.

Do you know of an older patent hive than this? I bought it with other colonies this spring. I asked the man how long he had owned this hive, and he said it had been on the place ever since he could remember, and he is 45 years old. The hive belonged to his father, and in the memory of the son has never been without bees. It has never been protected against the weather and has never been repainted. The paint is all gone, but the printed words are very plain and stand a sixteenth of an inch above the wood. The bees are the blackest I have ever seen, but not crosser than our Italians. I think this hive will be of some interest to the old-time beekeepers.

Conneaut, Pa.

C. Klabuhn.

Dreams.—By Bill Mellvir

(With apologies to Walt Mason)

Sometimes I dream I'm living where June is always here, and sunny days are giving to life the utmost cheer; where flowers are always springing rich nectar by the tank and bees are always bringing it in to fill the bank. I dream that I am owning beeyards on every hill, where honey tanks are groaning and more tanks yet to fill. I have a dozen flivvers to haul my honey home; the stuff my coin delivers inflates my noble dome. I live in gaudy splendor while chasing latest fads; I have the legal tender, I'm shelling out the scads. But when I wake next morning I find my dream a fake; no mansion I'm adorning, I'm just a country Jake. Instead of heavy

working the bees just try to rob, and trouble's always lurking unless I'm on the job. When'er I dream of nectar just oozing like a flood, I'm due for some dejector to cool my ardent blood. But when I dream of robbing I know it's really true, for trouble's always bobbing where fine air castles grew. For dreams can not be trusted when of too florid hue, and many folks go busted from thinking such dreams true. Now when I count my chickens I wait till they are hatched, for don't it beat the dickens how day-dreams must be patched? So don't weigh up your honey until it's in the tank, and don't check out your money before it's in the bank.



MY bees swarmed in June.

One of the new swarms made five supers of 24 sections each and one 8-frame full-depth brood-box, all full of honey besides their winter supply. I left the full 8-frame box on the hive for winter.—John Deml, Steele County, Minn.

The value of Iowa's honey crop for the season of 1919, 13,260,000 pounds of honey, was \$2,652,000.—Burlington Hawkeye, Dec. 11, 1919.

This has been a bumper year here for the beekeeper. Some colonies have produced as much as 50 pounds of fancy comb honey. The market was good. I sold for 33 to 48c per section.—B. O. Brown, Sullivan County, Tenn.

There are no up-to-date beekeepers near here. Nearly all keep bees in log gums. The few that have frame hives use cobbled-up affairs, and their honey is chunk honey. It sells for about 30c per pound locally.—Geo. W. Louder, Sussex County, Del.

I shook a laying-worker colony. Then I took a laying queen from my yard and ran her in at the entrance. Five minutes later I took a peep, and the queen was there quite at home. It was not long before the bees shoveled out the worker drones.—John W. Whitfield, Jefferson County, Pa.

At the Washington State Fair held at Yakima in September six exhibitors displayed about three tons of honey in an individual apiary building. It would be difficult to excel the extracted honey produced in the Yakima Valley of Washington, when considering color, body, and flavor.—Geo. W. York, Spokane County, Wash.

I was glad to see G. C. Greiner classify the Demuth plan of wintering. Of all punk wintering schemes I think the Demuth plan walks off with the blue ribbon. Pretty soon some one will come forward with a plan where each bee is to be wintered in a separate compartment with a trained nurse in attendance. Let's talk about something else besides packing for a while.—H. V. Schoonover, Adams, Ills.

A word about Queensland beekeeping. Since 1914 we have had one good season and four bad ones. At the present time we are in a drouth that has lasted for three years with little or no rain, and still no signs of any. It is called "sunny Queensland" and is keeping well up with its reputation, but the honey pot is empty as well as a great number of the boxes.—H. Simpson, Maryborough, Queensland, Australia, Sept. 20, 1919.

I have been wondering what will be the value of the honey and wax statistics gather-

BEES, MEN AND THINGS

(You may find it here)

ed by the census the coming January. Farmers are to tell how many hives they had on hand Jan. 1, and how much honey and wax they produced in 1919. A farm is

at least three acres, except when a smaller tract produced \$250. A great many beekeepers have a smaller tract, and produce less than the required value of honey. Hence will be omitted in the census. The total of such producers would, if listed, undoubtedly be a large sum, but only guesses are available as to what it is.—C. W. Campbell, Pulkaski, County, Ills.

It seems to be the general opinion here this fall that the bees are short on stores for the winter; and there is no sugar to be had. I have been out hunting wild bees several times with some old timers and almost without exception those bee trees we have found and cut into contained colonies without sufficient stores for the winter. Some had scarcely a pound and others from five to ten pounds, but the majority had nothing, and they were large colonies. As many as 25 wild swarms have been found in this vicinity this fall, an unusual number, I should say. Some of them have been taken up and are doing well. We are getting 35 and 40c for comb and 45c for the 16-oz. bottle.—Allan H. Faxon, Worcester County, Mass.

In securing some information relative to making arrangements for the co-operative marketing of honey, 1,600 questionnaires were sent to those beekeepers who received the Beekeepers' Letter. Of that number 350 replied. These replies were summed up, making some rather interesting figures of which I give the following: Number of colonies, 17,888; number of pounds of extracted honey produced, 557,253; number of pounds of comb honey produced, 156,997; the average price received for extracted honey sold at both wholesale and retail is 25.8c per pound; the average price received for comb honey, 35.8c per pound. At the time this questionnaire was sent out, about the first of November, beekeepers reporting had on hand a total of 106,748 pounds of honey which they expected to sell at wholesale. Out of this number we gather the following statistics: Number of beekeepers having 100 or more colonies, 52; average number of colonies per beekeeper, 179; average production per colony, 57 pounds; average return per colony for both comb and extracted, \$14.87; 48 out of the 52 beekeepers produced extracted honey; average return per colony for extracted, \$15.44; 18 out of the 52 produced comb honey; 14 of the 52 produced both comb and extracted honey.—B. F. Kindig in Beekeepers' Letter for Michigan beekeepers, November, 1919.

THE national conference of delegates representing all beekeeping organizations of the United States, teachers of beekeeping, and members of allied trades will meet at Muehlebach Hotel, Kansas City, Mo., Jan. 6 to 9. President B. F. Kindig and Secretary Chas. B. Justice of the National Beekeepers' Association have earnestly sought to make this meeting a notable one, for nothing less than a thorough reorganization of the National Beekeepers' Association along better and broader lines is to be determinedly undertaken. Every beekeepers' association in the country should send a delegate or delegates. Representatives of all legitimate beekeeping interests in the country have been invited to attend. This conference is called by the National Beekeepers' Association.



further information regarding the meeting.

* * *

The ninth annual winter beekeepers' short course of Ontario Agricultural College will be given from Jan. 13 to 24 at Guelph. The course is intended especially for the beginner in beekeeping. The course will be under the direction of F. Eric Millen, Provincial Apiarist, which assures its excellence. Geo. H. Rea of New York State will be one of the instructors.

* * *

The annual meeting of the York State Association of Beekeepers' Societies will be held at the Joseph Slocum College of Agriculture at Syracuse University, Syracuse, N. Y., on Tuesday and Wednesday, Feb. 3 and 4, 1920. O. L. Hershiser of Kenmore, N. Y., is president, and J. H. Cunningham, 303 University Place, Syracuse, N. Y., is secretary and treasurer. Address the latter for program or information. Dr. Burton N. Gates, State Inspector of Apiaries for Massachusetts, Geo. H. Rea, Dr. E. G. Carr, S. D. House, and Earl W. Hallenbeck are among the speakers on the program.

* * *

A course for commercial beekeepers will be held in connection with the annual program of the Ohio Beekeepers' Association during Farmers' Week at the Ohio State University of Columbus, from Jan. 26 to 30. Dr. E. F. Phillips and Geo. S. Demuth will be in charge. This is the same extension-work course as has been given in other States, and is of very great benefit and value to beekeepers. Detailed information may be secured from Prof. Jas. S. Hine of the Ohio State University, Columbus. The beekeepers of Ohio never before have had such opportunity for best instruction as this course offers.

* * *

The proprietor of "Pelican Apiary," New Orleans, La., is now in the Ohio Penitentiary, having been convicted of embezzlement of trust funds in Cleveland, O., to which place he was brought in November to answer to a grand jury indictment. His real name is Harry A. Anderson, altho he went under the name of J. M. Jenks in New Orleans. He advertised bees and queens in bee journals last April and May and swindled a considerable number of beekeepers. He falsely represented himself and his business references to Gleanings and other bee journals. He has proved himself a rascal of the first water, and the longer he remains in the penitentiary the better for society.

The Ontario County (N. Y.) Beekeepers' Society will hold a convention at Canandaigua, N. Y., on Jan. 13. F. Greiner, Naples, N. Y., is secretary, who will be glad to furnish information regarding this meeting.

* * *

The annual meeting of the Missouri Apicultural Society will be held the third week of January during Farmers' Week, at the University of Missouri, Columbia. For further information address L. Haseman, Entomologist and Chief Inspector, Columbia, Mo.

* * *

The annual meeting of the Washington State Beekeepers' Association will be held in the assembly hall of the Chamber of Commerce, Seattle, on Jan. 22-24. Co-operation and some measures of defense against spraying poison will be two chief topics of discussion at this meeting.

* * *

The Wayne County Beekeepers' Society will hold their third annual meeting at the Grange building in Newark, N. Y., on Jan. 30, 1920. All interested in beekeeping are invited to attend and take part in this meeting. Geo. H. Rea will be present. For program, address Deroy Taylor, Newark, N. Y.

* * *

The annual convention of The National Beekeepers' Association will be held at the Hotel Statler, Buffalo, N. Y., March 1 to 3, 1920. Part of the interesting program will be a report of recommendations from the Kansas City conference of delegates representing the beekeeping interests of the country to be held Jan. 6 to 9.

* * *

The annual meeting of the New Jersey Beekeepers' Association will be held at Trenton on Jan. 15 and 16, 1920. An excellent program has been prepared, on which appear the names of Harry W. Beaver, Wal-

QUESTION.—
I have a few colonies of bees, and each has over 40 pounds of honey for winter use. I have some unfinished frames of honey that I intended to give them in the spring. Is sugar syrup better for brood-rearing than natural stores? If so at what time would it be best to start to feed? I have about 100 old bass-wood trees around where I live, so I would like to have the colonies as strong as possible for the bass-wood.

Iowa.

Answer.—There is nothing so good for brood-rearing as natural stores. Sugar syrup is all right as a winter food, but is not as good as honey for brood-rearing, in the spring; nor do we recommend stimulative feeding in the spring, altho a few good authorities such as Alexander have recommended it in the past. As long as your colonies are kept strong and supplied with a good queen and plenty of stores, they will breed in the spring and supply you with plenty of workers in time for the harvest.

Question.—I send you under separate wrapper a sample, number 223, of honey. Will you examine it and let me know if you think it is pure honey and if it would be safe to feed to my bees for winter stores? It is so different from our honey that I am fearful I might lose my bees.

Kentucky.

S. C. Kirkpatrick.

Answer.—We have not had an analysis made of the honey, but we should say from the taste of it that it is not adulterated with glucose. If glucose were present the mixture would be thicker than shown in the sample. If it were adulterated with sugar syrup, that would not hurt it for feeding bees—it would be all the better. You, of course, know, however, that feeding honey of any kind to bees—unless you know its source—is attended with a great deal of danger from foul brood, and the only thing you can do is to boil it for 15 minutes in a closed vessel, being careful in the meantime that it does not boil over. Such honey when fed to bees is not suitable for winter food where the bees cannot have a flight at least once a week. In your climate we would be of the opinion that the bees would fly often enough to prevent dysentery. The quality of the honey is very good, and, if you know it came from a locality where there is no bee disease, you could feed it without boiling; but in order to do this it would be best to thin it with a little water.

Question.—The following is clipped from "The Christian Herald" of Oct. 25:

"It seems that the old song about the busy bee has been a flagrant imposition on a confiding people. As a matter of fact, the government experts have found that about half the bees have been confirmed loafers and have been getting jobs caring for baby bees just to escape real work. Not being able to reason with the idlers, the experts have taken strong means to rectify matters. They found they couldn't take a single bee out and argue him into working, so they have reconstructed the hives so that it is a

GLEANED BY ASKING

Iona Fowls

case of work or starve. By carefully studying the habits of the insects it was discovered that a hive could be made which would permit the care of the infant bees by just a few of the adults where heretofore nearly half the able-bodied individuals were escaping work by playing nurse. In the new hives the government finds that out of 40,000 bees, formerly divided equally between nurses and honey-makers the honey-makers are in a great majority. This increased efficiency last year not only took care of a large growth in honey consumption in the United States but made it possible to increase the export fifteen times."

I find after reading it three times, that my mind is in a mingled condition of amusement, incredulity, and wonder. Would like to see comment in Gleanings on the same.

S. C. Lord.

California.

Answer.—The article is a misleading one. There is already so general an ignorance concerning bees that it seems a great pity to increase such ignorance by foisting this sort of stuff on the public thru religious and other papers. It is true that colonies do sometimes loaf because they have not sufficient room in the brood-chamber or in the supers. In such a case a larger hive would remedy the matter. Sometimes colonies also loaf because of a poor queen. If the queen is replaced with one from a better working strain, the bees will seem much more industrious. The present tendency in hives is toward a larger rather than a smaller hive; so we hardly see how reconstructing the hives would cause the bees to "work or starve," for there is really more chance of the colonies starving when the hive is small than when it is large. Moreover, the government has no corner on large hives. When good Italian bees fail to work it is because the colony is diseased, the queen is in some way defective, or there is no nectar in the fields. But even when bees do for any of these reasons fail, they are not playing off by acting as nurses. That is fiction, pure and simple. We might also add that neither the government nor any one else has been able during the past year to change the habits of the bees to such an extent as to increase the export of honey 15 times.

Question.—If there are many conditions under which queens may be successfully introduced by simply dropping them on the combs, please state what are these conditions.

Philip D. Bishop.

Nova Scotia.

Answer.—We have sometimes used the fasting method with success after making the colony queenless for from 34 to 48 hours. The queen to be introduced is left without attendants and with nothing to eat for about 45 minutes, then the hive is opened very gently so that hardly a bee knows that the hive has been touched. We prefer to have a carpet, instead of the cover, over the top of the hive, when introducing in this way. We simply raise the corner of the carpet

very gently, then give one small puff of smoke, run the queen in, and then adjust the cover. Again, some introduce young virgins by simply running them in at the top of the hive. In fact, an old queen may sometimes be removed and a young virgin successfully introduced by placing her right on the comb, which is then put back in the hive.

Question.—I have two one-frame nuclei of Golden Italian bees, which have been troubled with moths. Before getting these one-frame nuclei I lost three full colonies from the same cause, two that I had bought from a near-by beekeeper and one that I had hived from a tree. Of course, the moth trouble is over for this year, but my colonies or nuclei are so weak that I don't know how to winter them.

Maryland.

S. O. Neal.

Answer.—Poor queens sometimes allow their colonies to dwindle until they become too weak to defend themselves. Also, there are some strains of bees that do not readily resist the wax moths, but where there are good strong colonies of leather-colored Italian bees there should be no trouble from moths. It is not surprising that moths should trouble one-frame nuclei. Even when composed of Italian bees they might have trouble defending themselves. Also, it is rather difficult to winter such small nuclei, altho this might be done in the cellar if the conditions were just right. The best thing to do with small nuclei at this time of the year is to unite them; but, unless you can unite to cover at least five combs, you may still have trouble in saving them.

Question.—How many queens can I keep in one nucleus and how long?

William Heart.

Illinois.

Answer.—It sometimes happens that during the summer the beekeeper has a number of extra queens and no place to keep them. In such a case a few queens may be kept in cages placed immediately over the cluster of bees, where they will be taken care of for a week or 10 days. If such queens are placed over strong colonies, they will be much safer. We have had as many as two dozen thus caged over a colony at one time.

Question.—I caught a swarm of Italian bees and hived them in a box for about one week. Then I took them out of the box and placed them on foundation, but the next day they swarmed again. I put them in another box and left them for a day. Then finding nothing wrong with the hive I put them back. But next day they cleared out. A friend of mine who is an experienced beekeeper had the same trouble with the same swarm. He hived them, and the queen laid eggs in the comb; then they left, leaving the eggs which were nearly hatched. Could you tell me why they wouldn't stay on the foundation?

H. V. Albrecht.

New Zealand.

Answer.—Colonies of bees often behave in this way when put on foundation. If given drawn comb and a frame containing young larvae a swarm will generally stay contented. When moved from another hive on to the foundation a colony is not as likely to be contented as is a swarm that has just issued; for, in the latter case, the bees are loaded with honey so they not only have something to eat, but also are able to draw

the foundation a little, thus giving the queen a chance to lay. It is rather unusual for a colony to leave after the queen has begun laying eggs; but, if the hive is filled with foundation, this sometimes occurs.

ANSWER BY J. H. LOVELL.

Question.—Under separate cover I send a large bee or fly that I found in July near one of my hives, with a honey bee grasped in its mandibles. I am sending it to you for classification.

Ohio.

J. E. Venard.

Answer.—The insect is not a bee but a fly; if you had observed it more carefully, you would have noticed that it had only one pair of wings, the second pair being replaced by a pair of balancers or "halters." This mistake is often made, and I once had a collector of great experience send me a fly for a bumblebee. This fly is one of the robber-flies, or *Asilidae*. Some of the species are quite stout resembling bumblebees in form, the resemblance being increased by a dense pubescence of black and yellow hairs. They are extremely predaceous, and such powerful insects as bumblebees and even dragon-flies become their prey. They also feed on larvae. This species, *Trupanea apivora*, is the bee-killer and captures the honeybee on the wing. Riley states that he has known one of them to kill 141 bees in a single day.

ANSWER BY E. R. ROOT.

Question.—I am desirous of moving to California and engaging in bee culture and chicken-raising for profit. Having no experience with bees I will probably have to start on a very small scale with them but hope to get a good location and grow into the business. I would be thankful for any helpful information you can give me concerning the State.

Florida.

R. E. Mathews.

Answer.—Beekeeping in California is a flourishing industry from a point 100 miles north of Sacramento to the southern boundary of the State. The largest beekeeping operations, however, are from Fresno on down to San Diego with Los Angeles as a center. There is considerable unoccupied territory in the northern portion of the area indicated, and some places farther south. The situation is shifting so much that the writer will be unable to give you exact places. He would, therefore, recommend that you buy a tourist round-trip ticket with the privilege of a stop-off. There are beekeepers at almost every postoffice; and if you will make a little inquiry you may find where they are located, and from them can get your information at first hand. The climate of California differs from that of southern Florida in that it is a little colder, with more variation between night and day. Except within 25 miles of San Francisco there is very little change of climate from Sacramento down to San Diego. The nights are colder all over the State than in Florida, and during the middle of the day it is not as hot. Unless you desire a change of climate and wish to go where you can get some real mountain scenery, you had better stay in Florida if you wish to get unoccupied bee territory.

SEVERAL weeks ago I got a little scratch on the forefinger of my right hand down near the root of the nail; but as I had a lot of work in the garden in the way of gathering my crops, etc., I paid but little attention to the

hurt. But it kept getting worse. Sometimes it would seem almost well, and then it would get a bump in some way during the day and then get worse. I tried protecting it with a little piece of cloth tied over the end of the finger; but the cloth soon got in the way, looked unsightly, and I neglected it until it became so bad that I had to take it to the doctor. He said he ought to have had charge sooner. But he cauterized it, putting on some salve. Then he tied it up and I went home. Toward night it was so painful that I called on him again. He said it would probably gather and break, but added that my best way was to get along with it as it was, as well as I could. Toward bedtime, however, the pain became so acute, I felt sure I should not be able to sleep a wink unless I had some relief. Of course, my little prayer, "Lord, help," stood up before me; but one of my skeptical friends had suggested to me—and he did it very kindly—that my answers to prayer were a good deal selfish ones; and I think he suggested, too, that I encouraged the idea—at least indirectly—that God seemed more willing to answer *my* prayers than the prayers of other people. In thinking it over I was impressed with the idea that perhaps I had been—at least to some extent—unwilling to bear the trials and crosses that seem to be the common lot of humanity. Had I really any right to pray that I might be delivered from whatever troubles confront me, as I have been doing the greater part of my life? I thought of Paul and his thorn in the flesh, and felt at the time that I, just then, had a "thorn in the flesh" in very truth; and the thorn seemed to be right down at the root of that finger-nail. Then I remembered good old Isaac Watts' little hymn:

Must I be carried to the skies
On flowery beds of ease,
While others fought to win the prize
And sailed thru bloody seas?
Since I must fight if I would win,
Increase my courage, Lord;
I'll bear the toil, endure the pain,
Supported by thy word.



My grace is sufficient for thee.—II COR. 12:9.
Before they call I will answer.—ISAIAH 65:24.
Neither shall there be any more pain.—REV. 21:4.

Am I going to be a man and take my share of pain and suffering like other people, or shall I be a "baby," when things like this come to pass? Then I remembered again the reply that came to Paul, "My grace is sufficient for

thee." I was just getting ready to take a bath before retiring. After thinking the matter over I ventured a little audible prayer something like this:

"O Lord, give me grace to bear this pain (even if it should prevent me from sleeping a wink tonight), if it be not consistent with thy holy will to have it removed."

My good friends, especially the ones who send me so many kind words of encouragement, please take a good look at that brief prayer. Is it all right? Would there be anything selfish or inconsistent in any poor suffering child of humanity in uttering such a prayer? Now for the result; and may God's Holy Spirit help me to tell it, so far as I am able, exactly as it happened.

Almost as soon as the prayer was uttered—at least within a few minutes—the pain ceased. There was inflammation, and the arm had been feverish clear up to the elbow; but almost in an instant it was gone. I went to bed and slept soundly. In the morning, when I came to examine the finger, to my great surprise the swelling had gone down, and everything was almost normal. I showed it to Mrs. Root as an evidence of the wonderful answer to prayer. By the way, let me digress a little.

Now, there is something more about this wonderful answer to my prayer. All I have said is strictly true; but after breakfast I went to remove the bandage I had worn during the night, and the antiseptic gauze, that the doctor gave me to do it up with, had a stain right over the spot nearest the finger-nail.

"Hello!" said I; "here is some explanation for this sudden relief." Then I proceeded to soak the disturbing finger in a glass of hot water to soften it up, and then I discovered the sore had broken during the night, and this was what made the stain. Then I went back to what happened after my prayer the night before. I was ready to get into the bathtub, but the water was almost too hot. I put my hand in to see if I could bear it—the "sore" hand, mind

you, for it was my right hand. It was pretty hot, but I thought I could stand it, and proceeded to take my bath. Probably the pain ceased at about the moment I put that hand in the hot water. I used Cuticura soap that night in order to be sure of using nothing that might do harm. The doctor said the Cuticura soap would be all right; so by the time I got thru bathing, the suffering finger got a pretty good soaking with soap and hot water; but it did not occur to me at the time that taking a bath had anything to do with stopping the pain, for just before taking the bath, I had soaked the finger a long while in hot water. Let me digress again:

Some of you may say I have admitted that my prayer had nothing to do with my speedy recovery. In fact, you may say I had brought it about myself by *accidentally* getting the water too hot in the bathtub. Yes, perhaps I did. But now see how nicely our second text comes in here:

"Before they call, I will answer."

When I got that water too hot in the bathtub, may it not be that I, unknowingly, was really answering my prayer, or helping to answer that prayer, even before the prayer itself had been uttered? and it did not spoil my faith a particle when I traced up how all that prayer came to be answered almost instantly. All I cared for, and care for now, is for speedy and prompt answers. "Give God the glory."

As I want this Home paper to be helpful, both bodily and spiritually, I want to say a word more about the use of hot water.

When Gleanings was printed (years ago) by windmill power, in putting up the machinery I fell and sprained my ankle. The pain was so severe that I could hardly keep from screaming outright. There was a doctor next door—a particular friend of mine. I sent a "rush order" for him. When he came in I said:

"Doctor, please give me some chloroform or something else, for I can't live very long with this awful pain."

Perhaps I exaggerated a little, but I was glad to hear him say, "Mr. Root, I can stop your pain almost instantly without any chloroform if somebody will bring me a kettle of hot water."

There was a fire in the furnace. I was then a manufacturer of jewelry. The steaming kettle was quickly at hand. He called for a pail partly filled with cool water. Then he poured in the hot water until he thought it was just right by putting his hand in.

"Here," said he; "put your foot in that hot water."

"But, doctor, that is too hot. I can't stand it."

"Yes, you can. It may be a little painful. But you are to decide which pain is the worse—that of the hot water or that from the sprain."

In about a minute I began to laugh; and, as I was a very busy man, in two or three minutes more they brought me a pile of letters, and I went on with my work. The doctor directed that I should keep the kettle there and fill up with hot water occasionally in order to keep the temperature high enough. I had no more trouble with the ankle after that. Whenever the pain came on I resorted to the pail of hot water again.

Years afterward I had an attack of acute inflammation of the neck of the bladder. A hurry call was sent to a doctor; and I do not know but I said the same thing to this doctor. I was glad to hear him respond much as the other one did—"Mr. Root, I am glad to tell you that I can relieve your pain almost in an instant without any medicine whatever. Just get into your bathtub and fill it up pretty well with water as *hot as you can stand it.*"

The remedy worked exactly like the other. I did not take any medicine, and have had but very little of that trouble since; and during the years that have passed I do not know how many times I have been able to relieve suffering—in fact, stop it almost instantly—by suggesting the use of hot water.*

A little while back I had an article entitled, "Stop, look, and listen." Now, when you get into trouble, not only "stop, look, and listen," but remember what I have said about hot water—a remedy that costs nothing, and does not do any injury like the use of drugs and medicines, mind you.

Besides the hot water, do not forget to call to the great Creator who made us, and placed us here, in his own image. Ask him, as I did, to give you grace to bear the pain, if it is his will that you should bear it, and to sharpen your intellects in your effort to find out the cause of your trouble and the best and cheapest way out.

*Many doctors seem to have the idea, or at least in times past they had the idea, that when they are called to treat a patient the patient may think the doctor has not earned his money unless he gives medicine of some kind. See page 609, September issue. Now, I have felt for years past that I should very much rather pay a doctor for advice without any medicine—that is, if no medicine is really needed—than to pay him for some powders, tablets, etc. In the two cases above mentioned, the doctors gave no medicine at all; and I was exceedingly glad to have them show me how to perform a quick cure without anything further than hot water—something that is always, or at least generally, right at hand.

Before closing I want to say just a few words about the matter of grace, mentioned in our first text. What does grace mean—a word used so often in the Bible? The best explanation I can give is to quote from a blessed old hymn:

Oh, to grace how great a debtor
Daily I'm constrained to be!
Let thy goodness as a fetter
Bind my wandering heart to thee.

There has been quite a little discussion of late whether the Bible is *all* the very inspired word of God. Well, maybe I am not strictly orthodox when I declare that, so far as I am concerned, it does not seem to me to make very much difference. I insist that *this* is strictly true; That God's loving words and admonition to the children of men are *most certainly* inspired; and one who reads his Bible attentively and makes use of these most precious promises will have inspiration himself, from on high, that is worth more than all the testimony of the whole wide world. And now, to go a little further, I think the words of the hymn I have just quoted are *also* inspired. Read it over and over, and it will give you the best definition of the word "grace" that can be given.

Now, there is just one more old hymn, by Cowper, that I used to hear sung in camp meeting more than 70 years ago. It contains this:

E'er since by faith I saw the stream
Thy flowing wounds supply,
Redeeming love has been my theme,
And shall be till I die.

I told you that some time back it was a great privilege to me, at the time when I took the anesthetic and also when I went up in a flying-machine, to feel the presence with me of the Holy Spirit, even the spirit of our Lord Jesus Christ; and when I got relief from my suffering, the few times when I woke up at night, and found my hand and arm were restored, it was a wonderful comfort to think it over, as I dropped to sleep again, and to praise the Lord for this sudden and wonderful deliverance from pain.

"HIGH COST OF LIVING."

I have made a "big discovery." Yes, another "big discovery," and just like the most of my "discoveries," perhaps it is not altogether new. Never mind, I will help the great, wide world once more, to "sit up and take notice." For months past I have been living on shredded wheat biscuits and milk. Both are made hot and the biscuits are well buttered, and a little salt added. Of course, I have some fruit and a

baked apple or a little sauce. Occasionally I have an egg, or a little meat, but I don't seem to care much for the latter. On this comparatively cheap diet I am exceedingly well. When we arrived here at our Florida home I found Wesley had harvested some beautiful Cuban flint corn. It was planted when we dug the potatoes. When I saw those beautiful golden, yellow ears, smooth and polished by Nature's own hand, I said, "This 'golden grain' must surely be good enough to eat." We grow this Cuban flint just because it is so hard and flinty the corn fly in its larval or worm state can't bore into it very much. This feature makes it hard to grind in our little handmill. And now comes my "great discovery." You recall what I have said about Burbank's new popcorn. Well, I have been using quite a lot of popcorn with my milk and shredded wheat. Why not see if *Cuban flint* won't pop? It didn't, at least not much. But after it was well *parched* it ground very easily in the mill, and with hot milk, butter, and salt—I hope you will like it as well as I do. And now you who have taken Gleanings for years, I want you to think back and recall that long ago I got a book on hunting, and this hunting book said a little bag of "ground parched corn" would sustain a hunter on a long tramp better than any other article of food. In other words, a pound of it would give more strength and endurance for a long hard tramp than a pound of meat, or any other food. The Indians knew this before the time of Columbus.

Now for the climax. Dr. Kellogg (the "vegetarian" man) threw a bombshell into our ranks a few months ago by declaring that it takes close to 10 pounds of grain to make one pound of beef or other meat; and yet a *single pound* of that same grain is worth more for food than the pound of meat that cost so much. I referred the matter to Director Thorne of our Ohio Experiment Station, and he admitted that it really did take about 10 pounds of grain to produce a pound of meat. The latter part of Kellogg's statement you can all settle for yourselves.

You can "parch" *wheat*, as well as corn, and when ground in a mill it is just as good as the shredded-wheat biscuits and costs much less. My good son-in-law, J. T. Calvert (by the way, he deserves more credit for the success of the A. I. Root Co. than he has ever received), who was on the "shredded-wheat" diet years before I took it up, recently said that the package that costs 15c, almost all over the world, contains only 3 cents' worth of wheat. Even if this be true, it is a great boon to humani-

ty, for you can buy it almost all over the world.

Now the great moral to this long story is to "get busy" parching your corn and wheat in a dripping pan in the oven, and then grind it in your own home. Make a "short cut between producer and consumer." A coffee mill will do; and one to be run by electricity is the thing, especially when you get the electricity from a windmill, as your old friend A. I. Root does.

By the way, that windmill and the electric automobile are working together like brothers, and doing their job *beautifully*.

SOME OF OUR "HAPPY SURPRISES" ON REACHING OUR FLORIDA WINTER HOME.

House was found cleaned in very good shape. No mud-wasp nests. No roaches—not a one. No flies. No mosquitoes until last night and then only one. Not a rat on the premises so far. No hot weather. No dust anywhere and no mud. Auto looks as fine as when we bought it. Corn, peas, lettuce, and onions up in garden and growing fine. Potatoes *almost up*. Whole house lighted by windmill.

TAKING A TRIP IN A FLYING-MACHINE.

In our October issue I told you about my flight of seven or eight minutes, and I also said I hesitated for fear I might be setting a bad example, and thereby induce others to take a trip and possibly lose their lives in so doing. Well, the two young men who had charge of the machine assured the crowd there was almost no risk—that they had made, if I remember correctly, something like 12,000 trips without an accident. I had reason, however, to think the above was more or less an exaggeration; and I noticed, too, that every passenger carried was obliged to sign a paper releasing the managers from all responsibility in case of accident. Well, now comes the sad wind-up. The very man or boy, I should call him, for whom I signed the paper lost his own life, and that of the passenger, only a few days afterward. It seems they made the flight successfully, and were comparatively near the ground, when something happened to the machine, just what nobody can at the present time tell, if I am correct about it. But the whole thing came crashing to the ground. The gasoline took fire, and the two occupants were charred corpses before any help could reach them. We are told they were both killed by the accident before the machine took fire. I believe there is a movement on foot just now to make the entire machine of something non-combusti-

ble. As flying-machines go thru the evolution that they must go thru with, like automobiles, railway cars, etc., it is likely the liability to such accidents will be largely done away with.

MOTH MILLER; NONE TO BOTHER BEES IN NORTH COLORADO.

Dear Mr. Root:—With this I send you a message from the foothills. It represents Colorado sunshine and flowers. I think the honey I produce here is of a finer quality than that produced in the valley, tho the field is limited and would not sustain many colonies without overstocking. In the early spring the bees build up and store surplus from wild flowers. Later, our main source of honey is alfalfa and sweet clover.

Mr. Root, at one of our little beekeepers' conventions in Bradentown I was asked to tell something about beekeeping in Colorado. Among other things I mentioned the fact that there are no wax moths here in north Colorado. You expressed surprise and seemed almost to question my statement. I do not know why they will not live here, nor do I know the extent of the area where they are not found. It would be interesting to bring the subject up in some western convention and endeavor to gain some light on the matter. Very truly yours,

A. E. AULT.

La Porte, Colo., Oct. 15, 1919.

Friend A., I take it from the above that the moth miller has not yet reached your locality; and the thing to do is to take great pains, in buying bees from a distance, to see that it does not get started with you. While it is a comparatively easy matter to keep free of it, "prevention" is *very much* better than "cure."

ELECTRIC LIGHTS IN THE HEN HOUSE.

Dear Mr. Root:—I have been reading your Home Department in Gleanings for over 30 years. I want to tell you something about electric lights in hen-houses. The person that originated the scheme lives here in Arlington. He uses also electric incubators and brooders. Now the secret of this light system is as follows: The grain is scattered in the straw in the house so that the hens have to scratch for it. The switch to turn on the lights is fixed to an alarm clock set to go off at 3:30 in the morning, which wakes up the hens and they lay fresh eggs for breakfast. The light in the evening did not work well, as it made the hens warm and liable to catch cold. Besides it was difficult to get them on the roost again. The morning light gets them out early and warms them in the coldest part of the day, and the alarm clock wakes them up, without anybody having to get up and turn on the switch.

CHAS. F. KINZIE.

Arlington, Calif., Nov. 17, 1919.

INTENSIVE FARMING.

They used to have a farming rule
Of forty acres and a mule.

Results were won by later men
With forty square feet and a hen.

And nowadays success we see
With forty inches and a bee.

—Wasp.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cents per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors. Copy should be received by 15th of preceding month to insure insertion.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeyer & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Well-ripened clover honey in new 60-lb. cans. Geo. M. Soward, Cato, N. Y.

FOR SALE.—Heartsease honey in 60-lb. cans. O. R. Carr, Avon, Ills.

FOR SALE.—25 cases fine clover honey in new 60-lb. cans. Edw. A. Winkler, Joliet, Ills.

FOR SALE.—Clover and buckwheat honey in any style containers (glass or tin). Let us quote you. The Deroy Taylor Co., Newark, N. Y.

FOR SALE.—Raspberry-milkweed honey in new 60-lb. cans (2 in case). P. W. Sowinski, Wharton, Ohio, R. D. 1.

FOR SALE.—Buckwheat honey, put up in 60-lb. cans, two per case. H. B. Gable, Romulus, N. Y.

FOR SALE.—New crop clover honey, two 60-lb. cans to the case. Sample 20c. W. B. Crane, McComb, Ohio.

FOR SALE.—Finest quality extracted white-clover honey, and buckwheat honey in new 60-lb. cans, two in a case. Chas. Sharp, Romulus, N. Y.

FOR SALE.—Choice Michigan white-clover honey in 5-lb. pails, 12 in case or 34 in barrel. David Running, Filion, Mich.

FOR SALE.—Alfalfa honey, case of 12 5-lb. pails, at 28c per lb.; case of 6 10-lb. pails, 27c per lb. f. o. b. shipping point. Walter Woodrow, Sun River, Mont.

FOR SALE.—Four tons choice clover honey, extra well ripened, packed in new 60-lb. tins, two in a case. Wish to sell in one lot. Lee & Wallin, Brooksville, Ky.

Choice "Kentucky" clover extracted honey. Well-ripened, thick, and rich. Perfectly clean and suitable for table use. Packed in 60-lb. tins, two in a case, 25c f. o. b. H. C. Lee, Brooksville, Ky.

FOR SALE.—12,000 lbs. new crop, well-ripened Old Ky. No. 1 clover honey, in 60-lb. cans, at 22½c per lb., f. o. b. Brooksville. Sample 25c. W. B. Wallin, Brooksville, Ky.

FOR SALE.—New crop extracted buckwheat honey put up in 10-lb. pails, \$2.25 per pail. Terms cash. Special price on 25 pails or more.

H. Hatton & Son, Andover, R. F. D. No. 3, Ohio.

FOR SALE.—Extracted honey, fine quality clover, 25c; clover and buckwheat mixed about half and half, 20c. Two 60-lb. cans to case, in 5-lb. pails, 3c a pound extra. Some buckwheat comb honey at \$6.50 per case of 24 sections. H. G. Quirin, Bellevue, Ohio.

FOR SALE.—Raspberry honey slightly mixed with goldenrod. Was all left on hives until thoroughly ripened. It is thick, rich, delicious, none better; put up in 60-lb. cans. Price, \$15.00 per can. Sample by mail for 20c which may be applied on order for honey. John Hutchinson, Lake City, Mich.

FOR SALE.—New orange-blossom honey in new 60-lb. tin cans, cased single, at 22c per pound. Garrison H. Adams, Palmetto, Fla.

FOR SALE.—Our crop of honey is now ready for shipment. It is a good grade white clover with a very small trace of basswood, almost water-white. It is put up in new 60-lb. tin cans, two to the case. This honey was all produced by ourselves above queen-excluders in nice white combs. Then combs were provided so that no honey was taken off until after the season when it was thoroughly cured by the bees. It costs more to raise a crop of honey this way, as we do not get as much per colony; so we have to have a little more money for this fancy article than the ordinary honey on the market. Try a small order and we feel sure you will buy no other. We can furnish at the following prices f. o. b. Northstar, one 60-lb. can \$15.50. In cases of two cans \$30.00 a case in any sized orders. The crop is short this year, and will not last long at these prices. We feel quite sure that the price will not be any lower; so do not be disappointed by not ordering early if you are looking for honey as good as money can buy.

D. R. Townsend, Northstar, Mich.

E. D. Townsend & Sons, Northstar, Michigan, offer their 1919 crop of white clover and white clover and basswood blend of extracted honey for sale. This crop (it's only a half crop this year) was stored in nice white clean extracting combs that had NEVER had a particle of brood hatched from them. We had more of those extracting combs than we could possibly use this year, and we piled them on the swarms as needed. NOT A SINGLE OUNCE OF HONEY WAS EXTRACTED UNTIL SOME TIME AFTER THE CLOSE OF THE WHITE HONEY FLOW; consequently, NONE could be produced that will excel this crop of honey. Of course, it is put up in NEW 60-pound net tin cans, and they are cased up for shipment, two in a case. If you are one of those who buy "just ordinary" honey, at the lowest price possible, kindly do not write us about this lot of honey; but if you can and have customers who will want the very best and are willing to pay the price, order a small shipment of this fine honey as a sample, then you will know just what our honey is and whether it is worth the little extra price we ask for it or not. We quote you this fine honey, either clear clover, or that containing about 5 per cent of basswood—just enough basswood to give it that exquisite flavor relished by so many, at only 25c per pound on car here at Northstar. Kindly address, with remittance. E. D. Townsend & Sons, Northstar, Mich.

HONEY AND WAX WANTED

WANTED.—To buy comb honey.

Edw. A. Winkler, Joliet, Ills.

WANTED.—Small lots of off-grade honey for baking purposes.

C. W. Finch, 1451 Ogden Ave., Chicago, Ills.

BEESWAX WANTED.—For manufacture into SUPERIOR FOUNDATION. (Weed Process.) Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.

M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. Send particulars by mail and samples of extracted.

Hoffman & Hauck, Inc., Woodhaven, N. Y.

WANTED.—Comb and extracted honey. Send sample of extracted and quote your best wholesale price f. o. b. your station, how packed, etc., in first letter.

D. A. Davis, 216 Greenwood, Birmingham, Mich.

BEESWAX WANTED.—During January I will pay 42c per lb. cash for average yellow beeswax, delivered here. State quantity and quality and await reply before shipping.

E. S. Robinson, Mayville, N. Y.

WANTED.—White clover or light extracted honey. Send sample, state how honey is put up and lowest cash price delivered at Monroe. Also buy beeswax. E. B. Rosa, Monroe, Wis.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WE BUY HONEY AND BEESWAX.—Give us your best price delivered New York. On comb honey state quantity, quality, size, weight per section, and sections to a case. Extracted honey, quantity, how packed, and send samples. Charles Israel Bros. Co., 486 Canal St., New York, N. Y.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 40c cash, 42c trade. We will pay 1 and 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival. The A. I. Root Co., Medina, Ohio.

FOR SALE

Root's Goods at Root's Prices.
A. W. Yates, 3 Chapman St., Hartford, Conn.

HONEY LABELS.—New designs. Catalog free. Eastern Label Co., Clintonville, Conn.

FOR SALE.—60-lb. cans, used once, 2 in case, 40c per case. Mason, Mechanic Falls, Me.

FOR SALE.—A full line of Root's goods at Root's prices. A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—**SUPERIOR FOUNDATION**, "Best by Test." Let us prove it. Order now. Superior Honey Co., Ogden, Utah.

STILES BEE SUPPLY COMPANY. Stillwater, Okla. We carry a full line of Root's Bee Supplies. Beeswax wanted. Free catalog.

FOR SALE.—1,000 staple-spaced frames or metal-spaced frames at a bargain. I. J. Stringham, Glen Cove, Nassau Co., N. Y.

Make your own foundation and earn money making it for others. The simple, easy way. Machine and outfit; hand, \$1.00.00, electric power, \$350.00. Grand Haven Pattern Works, Grand Haven, Mich.

PORTER BEE ESCAPES save honey, time, and money. Great labor-savers. For sale by all dealers in bee supplies. R. & E. C. Porter, Lewistown, Ills.

FOR SALE.—Second-hand honey tins, two per case, in exceptionally fine condition, at 50c per case. Buy them now for next season's honey crop. Hoffman & Hauck, Inc., Woodhaven, N. Y.

FOR SALE.—5,000 thick top-bar brood-frames in flat. In every way same as Hoffman, except are not self-spacing. 100, \$5.00; 1,000, \$42.00. F. D. Bowers, Sugar Grove, Pa.

FOR SALE.—Comb foundation at prices lower than you had thought possible. Wax worked for cash or on shares. Satisfaction guaranteed. E. S. Robinson, Mayville, N. Y.

FOR SALE.—200 Root standard 10-frame hive bodies, nailed and painted, including Hoffman frames, full sheets foundation, wired, electrically embedded, 100 bottom-boards, 100 galvanized covers. All well painted. Also 100 hives of bees. Chas. Schilke, R. F. D. No. 2, Matawan, N. J.

CANADIAN BEE SUPPLY & HONEY CO. Ltd.—73 Jarvis St., Toronto, Ont. (Note new address.) We have made-in-Canada goods; also can supply Root's goods on order. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—New honey cans. Two 5-gal cans in a cleated end case at \$1.20 per case, f. o. b. your station. Direct from the factory. Edw. A. Winkler, Joliet, Ills.

FOR SALE.—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, O.

FLORIDA BEEKEEPERS.—You save money by placing your order for Root's Bee Supplies with us. We carry the complete line. Will buy your beeswax. Write for catalog. Crenshaw Bros. Seed Co., Tampa, Fla.

FOR SALE.—One Cowan extractor 12½ x 16, in good condition, one new standard smoker, never been used, also one No. 3 Sharpless Separator, used five months, in excellent condition. Hiram Crossman, Vineland, R. D. No. 1, Box No. 64, N. J.

FOR SALE.—Root's Extractors and Smokers, Dadant's Foundation, and a full line of Lewis' Beeware. Our new price list will interest you. We pay 38c in cash and 40c in trade for clean yellow beeswax delivered in Denver. The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

FOR SALE.—200 new 10-frame cross style reversible bottom-boards at 50c each; 200 new 10-frame flat reversible covers made of best select white pine at 60c each; 100 new Alexander feeders for 8- or 10-frame hives at 20c each; 150 Boardman feeders without cap or jar at 12c each. All above goods are factory-made and have never been used. Write M. E. Eggers, Eau Claire, Wis.

Save your bees. If you can't get sugar to supply wintering colonies, or prefer to be certain of perfect feeding, quickly set in, or over your colonies, I will sell any part of 5,000 lbs. of comb honey in the frame (including frames in the weight) at 35c per pound f. o. b. Warrian, Ala. Also will sell supers and hives (shallow supers chiefly, a few Hoffman hives and a few Danzenbaker) at 25 per cent off Root's prices, to enable safe shipment of the combs. No disease in the apiary.

Mont Eyrie Orchards, Warrian, Ala.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1.50 per year. 15 cents per copy. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

REAL ESTATE

Fine location for beekeeper, 8 lots, good improvements, full basement, plenty of good fruit and shade trees, rich ground, chicken-fenced, \$3,000. Selling on account of ill health. Write first. C. Dellaidotti, Elkhorn, Nebr.

WANTS AND EXCHANGE

WANTED.—Small honey extractor. Give price and description. H. A. Cobbett, Morristown, N. J.

WANTED.—Two- or four-frame extractor. Hives. Bees. J. A. Kemp, Kempton, Ind.

FOR SALE OR EXCHANGE for honey, 20 colonies of bees; Cowan two-frame extractor, and 15 5-gallon cans, near Princeton, Ind., \$100.00 or best offer. W. C. Davenport, 2111 Noyes St., Evanston, Ills.

I want to get in touch with some reliable breeders and shippers of queens and package bees for direct shipment to Ontario beekeepers.

Edwin V. Tillson, Tillsonburg, Ont., Can.

WANTED.—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax. Superior Honey Co., Ogden, Utah.

WANTED.—Used dovetailed hives, shallow bright-extracting combs, Hoffman frames, queen-excluders. V. S. Gray, Afton, Tenn.

WANTED.—To buy or work on shares 200 to 300 colonies. Employment proposition also considered. Harold A. Breisch, Ringtown, Pa.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5 cts. a pound for wax rendered. The Fred W. Muth Co., Pearl & Walnut St., Cincinnati, O.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our new 1920 catalog. We will buy your share of the wax for cash or will work it into foundation for you. Dadant & Sons, Hamilton, Illinois.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list. Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens. No bees. W. G. Lauver, Middletown, Pa.

Well-bred bees and queens. Hives and supplies. J. H. M. Cook, 84 Cortlandt St., New York.

QUEENS ON APPROVAL.—Bees by package or colony. A. M. Applegate, Reynoldsville, Pa.

QUEENS ON APPROVAL. Bees by package or colony. Birdie M. Hartle, Reynoldsville, Pa.

Golden Italian queens, untested, \$1.25 each; dozen, \$12.00. E. A. Simmons, Greenville, Ala.

PHELPS' GOLDEN QUEENS will please you. Mated, \$2.00. Try one and you will be convinced. C. W. Phelps & Son, Binghamton, N. Y.

"She suits me" Italian queens, \$1.15 each from May 15th to Oct. 15th; 10 or more, \$1.00 each. Allen Latham, Norwichton, Conn.

FOR SALE.—Indianola Apiary offers Italian bees and queens; tested, \$1.50; untested, \$1.00. J. W. Sherman, Valdosta, Ga.

When it's **GOLDEN** it's **Phelps'**. Try one and be convinced. Virgins, \$1.00; mated, \$2.00. C. W. Phelps & Son, Binghamton, N. Y.

GOLDENS THAT ARE TRUE TO NAME. 1 selected untested queen, \$1.50; 6, \$7.50; 12, \$13.50; 50, \$55.00; 100, \$100.00. Garden City Apiaries, San Jose, Calif.

PHELPS' GOLDEN ITALIAN QUEENS combine the qualities you want. They are **GREAT HONEY-GATHERERS, BEAUTIFUL** and **GENTLE**. Virgins, \$1.00; mated, \$2.00. C. W. Phelps & Son, Binghamton, N. Y.

ITALIAN QUEENS OF WINDMERE will be ready in May, untested, \$1.25 each; 6 for \$7.00; tested, \$2.00 each; selected tested, \$2.50 each; breeders, \$5.00 to \$20.00. Satisfaction guaranteed. Now booking orders. Prof. W. A. Matheny, Ohio University, Athens, Ohio.

FOR SALE.—Italian queens from best, disease-resisting stock, mailed as soon as hatched. Improved method for introducing with every order. Prices, April to October 1, 75c; 10, \$6.00; 50, \$25.00. Order now for spring delivery. James McKee, Riverside, Calif.

FOR SALE.—Golden and three-banded queens untested, April, May, and June delivery, \$1.25 each; \$12.50 per doz. Satisfaction.

R. O. Cox, Greenville, R. D. No. 4, Ala.

We will ship 2-lb. packages and full colonies only this season. Three-banded Italian queens any quantity. Send for prices. J. A. Jones & Son, R. D. No. 1, Box No. 11-A, Montgomery, Ala.

Golden queens ready April 15th. One queen, \$1.50; 6, \$7.50; 12, \$14.00; 100, \$100.00. Virgins, 75c each.

W. W. Talley, Greenville, R. D. No. 4, Ala.

BEEES BY THE POUND.—Also **QUEENS**. Booking orders now. **FREE** circulars give details. See larger ad elsewhere. Nueces County Apiaries, Calallen, Texas, E. B. Ault, Prop.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; May and June, untested, each, \$2.00; six, \$7.50; doz. \$14.00; tested, \$4.00; breeders, \$5.00 to \$20.00. J. B. Brockwell, Barnettts, Va.

FOR SALE.—Mr. Beeman, head your colonies of bees with the best Italian stock raised in the South. One queen, \$1.25; 12 queens, \$14.00. One pound of bees with queen, postpaid, \$6.00. Safe arrival and satisfaction guaranteed.

M. Bates, Greenville, R. D. No. 4, Ala.

FOR SALE.—Three-band Italian queens from best honey-gathering strain obtainable (no disease). Untested queens, \$1.25 each; 6, \$6.50; 12, \$12.00; select untested, \$1.50 each; 6, \$9.00; 12, \$18.00; tested, 2.50 each. Safe arrival and satisfaction guaranteed.

W. T. Perdue, Fort Deposit, R. D. No. 1, Ala.

THE BEES THAT PLEASE. Three-band leather-colored Italians, hustlers, none better, 2-lb. packages only. Untested queens, \$1.25; 2-lb. packages, \$4.75. Ready to ship about April 15. 25 per cent in advance, balance to be paid before bees are shipped. Write for circular.

J. M. Cutts, R. F. D. No. 1, Montgomery, Ala.

FOR SALE.—Quirin's hardy northern-bred Italians will please you. All our yards are wintered on summer stands; more than 25 years a commercial queen-breeder. Tested and breeding queens ready almost any time weather permits mailing. Untested ready about June 1. Orders booked now. Testimonials and price for asking.

H. G. Quirin, Bellevue, Ohio.

RED CLOVER ITALIAN BEES and queens in two and three-pound packages for sale. My bees have taken first prize at the North Carolina State Fair. Our bees are giving wonderful results the entire U. S. A. over and Canada. We have shipped bees to nearly every State in the U. S. and have had wonderful success. We ship bees by parcel post mostly with the privilege of the cages returned to us. Our bees are wonderfully good honey-gatherers, and are beautiful queens, free from foul-brood disease of any kind. You will make no mistake in buying them. First come, first served. Deliveries, May and June, 1920. Write us your needs.

H. B. Murray, Liberty, No. Car.

MISCELLANEOUS

Write for shipping tags and our prices for rendering your old combs, cappings, etc. We guarantee a first-class job. The Dero Taylor Co., Newark, N. Y.

Guinea Pigs. Young stock, for sale, females \$1.50; males \$1.00. Pleasant Hill Caviary, 1629 E. Florida, St., Springfield, Mo.

Belgian Bucks; 3 heavy thoroughbreds of breeding age, price \$3.00 each. Not registered. Louis Bordua, Somers, Box No. 46, Conn.

TELL WHAT YOU KNOW! The Western Honey Bee offers cash and other prizes in a competition (ending March 1st) for articles pertaining to the work of beekeeping. Try your hand; any one can compete, whether a subscriber to the Honey Bee or not. Send for a sample copy (free) containing particulars. Address WESTERN HONEY BEE, 121 Temple St., Los Angeles, California.

HELP WANTED

WANTED.—Three queen-breeders and three practical beemen. Write
Northtropic Honey Co., Guatemala, C. A.

WANTED.—Man to work 250 hives of bees for comb honey; give experience, wages wanted, and reference. R. S. Beckett, Rifle, Colo.

WANTED.—Man to tend about 300 swarms of bees. Steady employment to the right party. State wages and experience. S. R. Stewart, Rifle, Colo.

WANTED.—Good man who knows the bee business. Permanent position.
Geo. E. Duis, Grand Forks, No. Dak.

Two or more men wanted to extract 30,000 pounds of honey this winter. Good power outfit. Will give one cent a pound for extracted to experienced help. G. Frank Pease, Haughton, La.

HELP WANTED.—Assistant to help in large bee business. Excellent chance for advancement to foreman with big wages to right party.
M. E. Ballard, Roxbury, N. Y.

WANTED.—Single man who knows all the kinks in the production of extracted honey, one who can raise queens successfully, and produce results. A good position and good wages for the right man for the season of 1920.

F. A. Young, Grand View, Idaho.

WANTED.—Willing man for assistant in bee and queen yards. Permanent place and good chance for advancement to the right man. State wages wanted in first letter.

Geo. A. Hummer & Sons, Prairie Point, Miss.

WANTED.—Two experienced bee men for the season of 1920. One queen-breeder with experience; one with experience in handling bees. State age, number of years' experience and wages. Also give reference.

W. J. Forehand & Sons, Ft. Deposit, Ala.

WANTED.—A competent and reliable, clean, single young man to run our apiary of 140 colonies for comb honey, cultivate 10 acres and do regular chores. A good thing for the right kind of a man. State age, experience, and terms of payment in first letter. May refer to The A. I. Root Co., Medina, Ohio. Mrs. Geo. E. Goodwin, Lyons, Mich.

WANTED.—Ambitious young man, 25, single, reliable, and clean, with some knowledge of beekeeping and supplies, desires to get with beekeeper for the season of 1920, either honey-producer or queen-breeder. Address, Albert F. Roorda, 10505 So. La Salle St., Chicago, Ill.

WANTED.—One experienced beeman. Must understand out-apiary work for comb and extracted honey and the handling of motor trucks. Write full particulars, experience, reference, age, and salary wanted in first letter. Can give permanent employment to the right man.

W. J. Stahmann, Clint, Texas.

SITUATIONS WANTED

Young married man, ex-soldier, experienced honey-producer, wants to take up work with some thoroughly up-to-date and growing bee business. Best of qualifications and references. Expects to buy interest in business if satisfactory.

Closson Scott, 900 Parkman St., Warren, Ohio.

CALIFORNIA BEEKEEPERS

Mistakes are expensive. The greater the experience, the fewer the mistakes. The A. I. Root Co. has been in business for 50 years, and this long experience prevents the mistakes often made by the new manufacturer of beekeepers' supplies—mistakes that the beekeepers indirectly have to pay for.

For 50 years our business has been that of manufacturing in large quantities high-grade beekeepers' supplies. Believing that the best are the cheapest in the long run, we have never made any other kind. There is no economy in buying an inaccurately made hive, nor one which will not hold its shape year after year whether it is left in one place or moved from one locality to another. Bees are worth more and sell for a higher price when in standard hives.

The Same Automatic Machinery in California

Much of the same automatic machinery that has made Root supplies famous the world over have been installed in California, thus insuring the same quality of workmanship in Root Goods on the Pacific coast.

In comb-foundation machinery alone no expense has been spared in putting in the biggest and best outfit that can be used for turning out the matchless quality of foundation for which the Root factories are noted. Moreover, an entirely new method of refining the wax and an entirely new design of the mill itself make possible a foundation never before equalled.

See the New Honey-extractor

The new extractor is a success and it is now being manufactured in quantities. Ask to have it demonstrated either at the factory, 1824 East 15th street, Los Angeles, or at the San Francisco branch, 52-54 Main street. Reversing at will without slowing down, and as many times as desired, is a great time saver. Buy the best and you buy the cheapest.

THE A. I. ROOT CO. OF CALIFORNIA

MASON BEE SUPPLY COMPANY**MECHANIC FALLS, MAINE**

From 1897 to 1919 the Northeastern

Branch of The A. I. Root Company

Prompt and Efficient Service **BECAUSE—Only Root's Goods are sold.**
 It is a business with us—not a side line.
 Eight mails daily.
 Two lines of railway.

If you have not received 1919 catalog, send name at once.

Thagard's Italian Queens

I am booking orders for April to October deliveries. My queens are bred from imported stock; they are hardy, prolific, gentle, disease-resisting, and honey-producers. Untested queens, \$1.50 each; \$7.50 for six. I guarantee pure mating, safe arrival, and perfect satisfaction. Catalog free.

V. R. Thagard -:- Greenville, Alabama**"Special Crops"** A high-class illustrated monthly journal devoted

to the Growing and Marketing of Ginseng, Golden Seal, Senega Root, Belladonna, and other unusual crops. \$1.00 per year. Sample copy 10c. Address

Special Crops, Box G, Skaneateles, New York

Send to Indianapolis if you want your
Bee Supplies in a Hurry!!

Beekeepers of Indiana, we carry a complete line of Root supplies at this branch, and we give all orders our prompt attention

The A. I. Root Company

873 Massachusetts Avenue

Indianapolis, Indiana

Our Food Page—Continued from page 26.

and serve very hot. This amount will serve 12 or more people.

SCALLOPED CORN.

| | |
|-----------------|--------|
| Canned corn | Milk |
| Oyster crackers | Salt |
| Butter | Pepper |

Arrange alternate layers of crushed crackers and canned corn in an oiled baker, dotting each layer with bits of butter, season to taste, pour in milk until you can see it, and bake in a moderate oven until lightly browned. The top layer should be of cracker crumbs.

ORANGE SHERBET.

| | |
|-----------|----------------|
| 5 lemons | 4½ cups sugar |
| 5 oranges | 2½ quarts milk |

Mix the juice of the oranges and lemons, the grated rind of one of each, and the sugar, and let stand several hours or over night. Put the sugar and juice thus prepared into the freezer and chill, then add the milk which should be cold, and freeze as usual. A little cream instead of all milk makes a richer and smoother sherbet, but it is very good without. If the lemons and oranges are very large and sour, a little more sugar may be added. This amount makes about a gallon.

RASPBERRY SHERBET.

| | |
|------------------------|-------------------------|
| 6 lemons | honey |
| 1 pint can raspberries | 2½ quarts water |
| 3½ or 4 cups sugar or | 1 egg white well beaten |

Mix the juice of the lemons, the grated

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THE SAVINGS DEPOSIT BANK CO.**A.T. SPITZER, Pres.****E.R. ROOT, Vice Pres. E.B. SPITZER, Cash.****MEDINA, OHIO****Reduced Prices on Comb Foundation**

In spite of the fact that I am paying higher prices than ever before for beeswax, I have decided on a reduction in prices of comb foundation. I now offer 50-lb. lots at the following prices. Smaller quantities are slightly higher.

Medium brood, 72c per lb. Light brood, 75c per lb. Thin super, 82c per lb.

GUARANTEE: I guarantee my foundation to be made of clean pure beeswax, with perfect impression, cut exact size ordered, and packed so as to reach you in good order. Your own wax worked into foundation at lowest rates, for cash or on shares. Send for complete price list.

BEE SWAX WANTED. During January I will pay for average yellow wax, delivered here, 42c per lb. State quantity and quality, and await reply before shipping.

E. S. Robinson -:- Mayville, Chautauqua Co., New York

rind of one, the raspberries rubbed thru a sieve, and the water, and let stand several hours to dissolve the sugar. Put in freezer and when it begins to freeze add the stiffly beaten egg white. Honey is very good instead of sugar in this recipe. Any other canned fruit may be substituted for the raspberries. Cranberries, stewed and strained, make a delicious sherbet by this recipe. This also makes a gallon.

SWEET CLOVER 6^{.40}₅₀

Greatest Money Making Crop. Big Money for the grower. Builds up land rapidly and produces heavy money making crops while doing it. Excellent pasture and hay. Easy to start. Grows in all soils. White Blossom unhulled. Our scarified, highly germinating tested Seed is the best. Write today for big Seed Guide and FREE Samples. American Mutual Seed Co. Dept 951 Chicago, Ill.

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SIOUX CITY, IOWA

BEEES MAKE HONEY
HONEY MAKES MONEY

but only when proper equip-
ment is correctly used.

"LEWIS"
BEE SUPPLIES

are accurately constructed and
are right in quality and price.

Central West Beekeepers

NOW

is the time to order your supplies. Spring will soon be
here, so---

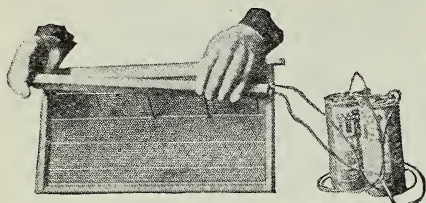
DON'T WAIT

one minute longer. Order your goods now or tell us
what you need. We can take care of you with the fa-
mous ROOT service. Please remember the announce-
ment of our change of name from The Kretschmer
Manufacturing Company to the A. I. Root Company of
Iowa. The beekeepers of the Middle West will have
our best service.

The A. I. Root Co. of Iowa

Council Bluffs, Iowa

Electric Imbedder



Price without Batteries, \$1.25

Actually cements wires in the foundation. Will work with dry cells or with city current. Best device of its kind on the market. For sale by all bee supply dealers.

Dadant & Sons Manufacturers Hamilton, Ills.

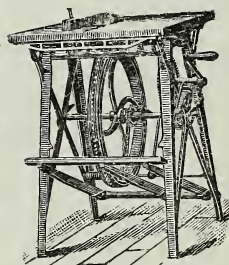
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Machines on Trial

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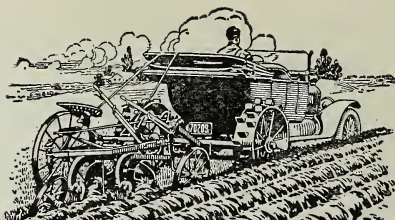
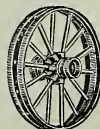
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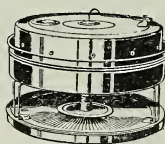
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Complete Line of Beekeepers' Supplies

Catalog on Request

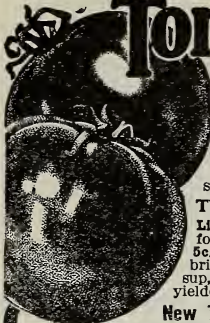
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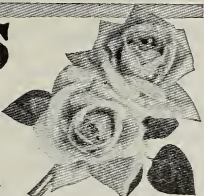
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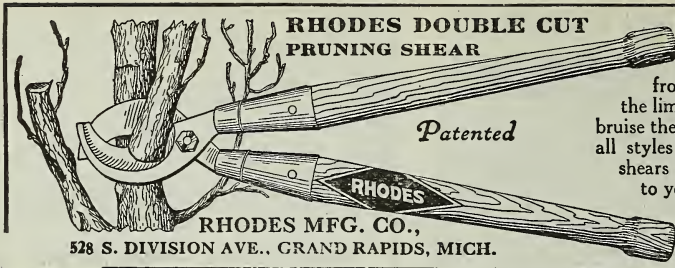


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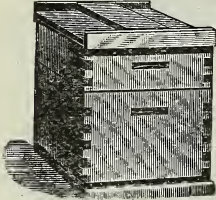
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We Have on Hand a Quantity of

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but otherwise good for all practical purposes, which we offer at the following low prices:

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| 50,000 | No. 2 | 4 1/2 x 1 1/2 | Plain, at..... | \$7.50 |
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Write for catalogue and price list of Falcon Bee Supplies.

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Now let's look over 1920; indications are that sugar will be higher in price, honey's most extensive competitor. So we are safe in working for a big crop of honey for 1920; and with this end in view, we are organizing an advertising campaign to create a larger demand for honey, and in this way we have been able to handle all the honey offered us at the highest market prices.

We will continue to carry a complete line of standard Lewis Beeware with its proven merits and Dadant's Foundation, which has stood the test of two generations and no radical changes needed. We can render your old combs and cappings at Newark and exchange your wax for foundation or supplies. If you have honey to offer, we will be glad to quote you; our 1920 Bee Supply Catalog free. Your's for successful beekeeping.

Liberty Bonds accepted as cash.

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In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1920. We are paying higher prices than ever for wax. We work wax for cash or on shares.

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Big stock, wholesale and retail. - Big catalog free.

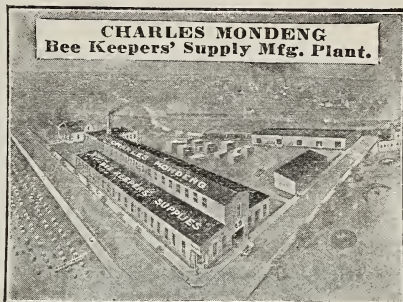
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THE ONE MEANS MUCH
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As general agents in Michigan,
we can give you better and
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We are all stocked
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Order now
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From Wisconsin: "Last year when my old-time beekeeping friends heard that I had bought bees from a man in Texas they called me a fool; but now I have more bees and more honey than any man in Green county. It is the talk of this part of the woods." (Same party has in his order again for over a thousand dollars' worth for spring shipping.)

From West Virginia: "The State Apiarist pronounced my queen one of the finest queens he ever saw. To say I am well pleased would be to put it

mildly. Will want more bees and queens in the spring."

Guarantee shipment to be made on time. Free circular explains, also gives prices on bees by Parcel Post, Nuclei, etc.

Prices f. o. b. Here, by Express.

| | | |
|------------------|-----------------------|--------|
| 1-lb. pkg. bees, | \$2.40; 25 or more... | \$2.16 |
| 2-lb. pkg. bees, | 4.25; 25 or more... | 3.83 |
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Queens.

| | |
|---------------------------------------|--------|
| Untested, \$1.50 each; 25 or more.... | \$1.35 |
| Tested, \$2.50 each; 25 or more..... | 2.25 |
| Select tested, each..... | 3.00 |

Add price of queen wanted when ordering bees.

NUECES COUNTY APIARIES :- CALALLEN, TEXAS

E. B. AULT, Prop.

INSURANCE AGAINST LOSS

NOT A TWENTY-YEAR, BUT A ONE-YEAR POLICY

If, on a cold blustery winter day, an insurance agent should walk into your office and say that he would like to insure your bees against loss in the spring, wouldn't you be interested? But if he should say that for about 80 cents he would insure each colony for about 25 years, wouldn't you be greatly interested? That would be only about $3\frac{1}{2}$ c per year on \$20.00, or a little over $1\frac{1}{2}$ mills per dollar. This is practically what the Forehand Feeder does.

The Forehand Feeder is the insurance we are offering you. It is not only an insurance but a wise investment—one that will pay big interest on the feed that it saves, the time it saves and the trouble and labor it avoids. It will last you at least 25 years. It will not only help you with your spring problems but all the year round. Let us tell you about the Forehand Feeder as an insurance and profitable investment.

The Forehand Feeder is not a twenty-year policy. It pays big profits the first year. It is a one-year policy. You can cash in on it the first day. Write us at once for the "Forehand Feeder Insurance Policy." It explains fully about our feeder.

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We shall be very glad to send you our catalog listing a complete line of supplies. Our line of bee supplies are of the best material, workmanship, and quality. We offer you good service, prompt and fair dealings. We can save you money. Get in your order now before the rush. Write at once for our supply catalog.

Queens and Bees

You will want your queens and bees early in the spring. Will you be too late to get your order in? We are booking orders fast for spring delivery. It doesn't pay to wait; get in your order now. Forehand's Three Bands need no recommendation. For over a quarter of a century they have been pleasing the best beekeepers throughout the world. They are the kind that are *surpassed by none but superior to many*. They are thrifty, hardy, gentle, and beautiful. Write at once for our special Queen and Bee circular, giving full description and prices of our queens and bees.

Twenty-seven years of beekeeping enables us to give you goods of the finest quality—the kind that have proved this. Our long experience has taught us to offer only the best goods and best service to our customers.

W. J. Forehand & Sons "The Bee Men" Ft. Deposit, Ala.

BEEES We furnish full colonies of Italian bees in double-walled hives, single-walled hives, shipping-boxes, and three-frame nucleus colonies.

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Nassau Co., N. Y.**

"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable—Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**
306 E. 5th St., Canton, O.

SWEET CLOVER

Buy your Seed direct at wholesale prices. All kinds. Let us save you money on your Sweet Clover Seed. Write for wholesale prices and samples today. Get our big 1920 Seed Catalog Free.

DAVE PECK SEED CO.
3112 Pa. Ave. Evansville, Ind.

TRADE NOTES

We have a limited amount of 7 per cent cumulative preferred stock of this company for sale at par and accrued dividend. If interested, please address The A. I. Root Company of Iowa, Council Bluffs, A. H. Dunn, Sec'y.

FINAL ANNOUNCEMENT AS TO SECURING BACK NUMBERS AND VOLUMES OF GLEANINGS

So many have taken advantage of the advertised opportunity to complete their back volumes of Gleanings, that our stock of old Gleanings is much reduced. But we can still furnish complete in single copies, at 50c a year, the following years: 1873, 1874, 1876, 1888, 1890 to 1899 inclusive, 1901, 1904, 1905, 1907, 1909, and 1910. All other years lack some numbers. In bound volumes, we can furnish all years except 1873, 1875, 1902, and 1903, at \$1.50 per bound volume. While chance remains, take advantage of the opportunity to get the best and lowest-priced beekeeping literature that can be bought. You don't have to buy complete years. Send a dollar (or more), and tell us to send you as many copies of back Gleanings as the sum will pay for, designating about what years you would prefer (remembering none of 1916-1919 are now left). Address Gleanings in Bee Culture, Medina, Ohio.

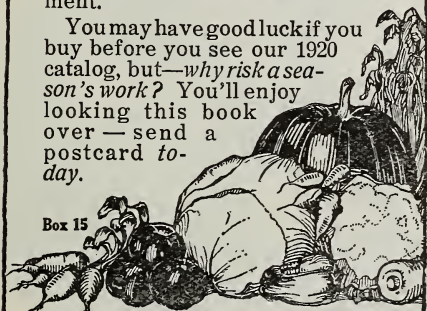
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WANTED.—One experienced man and students, as helpers with our 1,000 colonies. Best opportunity to learn the business from A to Z, in the actual production of carloads of honey. Theory also. Write immediately, giving age, height, weight, habits, former employment, experience, references, wages, photo, all in first letter. E. F. Atwater (former Special Field Agent in Beekeeping, U. S. Dept. Agr. for Calif., Ariz., and New Mexico), Meridian, Idaho.

Good judgment brings good crops

Experienced farmers depend as little as possible upon *luck*. Rewards follow effort based on good judgment—and a heavy crop is a mighty fine reward. Storrs and Harrison sturdy-growth trees, seeds and plants represent 66 years' conscientious work in skillful breeding and careful selection. On our 1200-acre grounds the type and vigor of all strains are proven—many originate there. Plant S. & H. varieties—it's good judgment.

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Trees from the Woodlawn Nurseries are vigorous growers and bred-to-bear. Our 44 years of successful growing experience has been devoted to the production of thrifty strong-rooted stock. We have the exclusive sale of the *New Ohio Beauty Apple* wonderful new Ohio Beauty Apple.



The same time-proven dependability makes Woodlawn grown shrubs, flowering bushes and perennials safe investments. The moderate prices bring an individual and attractive garden within the most moderate means.

Our illustrated 1920 Nursery List contains valuable planting and growing information as well as a catalog of select nursery stock. Mailed on request.

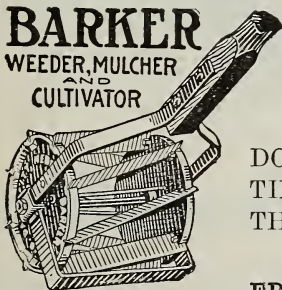
Our vegetable and flower-garden seeds make thrifty, beautiful gardens

WOODLAWN NURSERIES

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Mark X in ☐ by No. A15105 in coupon. Be sure to give size wanted.

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Keep your money until shoes come. Not a cent to pay now. Sent direct to your home on approval. Then let the shoes themselves convince you of their bargain value or return them and get your money back. This is the modern, sensible way to buy—the way thousands are buying their shoes today direct from us—getting satisfaction—saving money. Fill out the coupon and send it now.

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There is a book published for beekeepers that has no parallel in any other industry as the one recognized guide and teacher in such industry. This book is

A B C and X Y Z of Bee Culture



It is the largest and most complete work on bees in the world, making an illustrated encyclopedia of more than 850 pages, arranged alphabetically, and treating every beekeeping subject exhaustively but simply. Each subject is treated as an entirety in itself, but cross references enable the reader to get every related fact and discussion.

While the book was written primarily by A. I. Root for the benefit of beginners, and while it is still a work for those who are beginning in bees, it is so comprehensive that veterans find it useful and almost indispensable in their business. Many of the best beekeepers in the country own a copy of every edition. Not only is every subject thoroly treated, but practically all the best-known methods are given.

A Second New Edition

Only last July (1919) a new edition of the A B C and X Y Z of Bee Culture to the number of 15,000 was brought out, the next previous edition appearing only two years before, in 1917. Yet, so valuable and popular is this book, that a second printing of the 1919 edition is now under way, the 1919 output having already been practically sold out. This 1919 edition contains one very important revision—that on the subject of foul brood. The results of the latest investigations and the latest conclusions of experts studying brood diseases will be found in this edition.

The price of this valuable volume is \$2.50. Clubbed with "Gleanings in Bee Culture," the monthly magazine edited by A. I. Root, E. R. Root, and H. H. Root, the price is \$3.25. A B C and X Y Z of Bee Culture is for sale by all dealers in beekeepers' supplies everywhere.

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Good beehives are much like good people.

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